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and much more!



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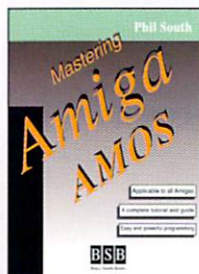
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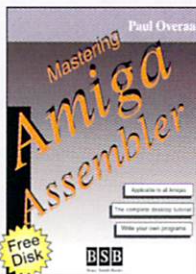
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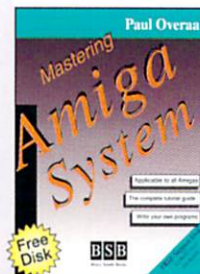
Phil South, 320 pages, \$26.00, ISBN: 1-873308-12-4



The Amiga's operating system has proved a major obstacle to assembly language programmers, but this book is guaranteed to get the serious Amiga owner into the world of 68000 assembly language programming. It assumes some experience of high-level languages such as BASIC. Skeleton programs are provided for the beginner to follow and develop.

Mastering Amiga Assembler

Paul Overaa, 416 pages, \$29.00, ISBN: 1-873308-11-6



If you want to take over your Amiga then you need to understand and program the Amiga System itself. This book is an introductory guide to just that. Assuming a base knowledge of C but explaining all new System concepts, it teaches you how to handle tasks and processes, work with libraries, incorporate IFF graphics and much, much more.

Mastering Amiga System

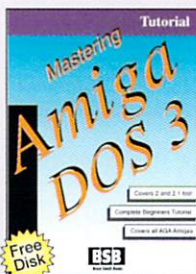
Paul Overaa, 400 pages \$29.00, ISBN: 1-873308-06-X



Want to learn Assembly language but don't know your *IntuiMessage* from your *Null terminated string*? Then the *Amiga Assembler Insider Guide* is for you! With easy-to-follow examples and instructions it explains and demystifies the jargon. Applicable to all Amigas, it comes with a free disk which includes the PD A68k assembler and programs from the book.

Amiga Assembler Insider Guide

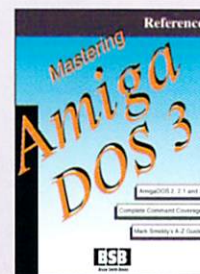
Paul Overaa, 256 pages, \$23.00, ISBN: 1-873308-27-2



Perhaps the most comprehensive introductory tutorial ever written about the Amiga's operating system in a massive 384 pages. If you want to learn about AmigaDOS 2, 2.1 or 3 then this is the book for you. It assumes you know nothing about the subject but - if you follow the step by step exercises - will turn you into an AmigaDOS expert.

Mastering AmigaDOS 3 - Tutorial

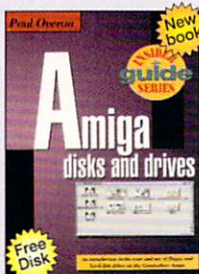
Smith & Smiddy, 384 pages, \$27.00, ISBN: 1-873308-20-5



This is the full reference guide to the AmigaDOS command set with complete coverage of over 140 AmigaDOS 2, 2.1 and 3 commands. Arranged alphabetically, it includes many worked examples with full command synopsis and templates. Contains details on the Mountlist, AmigaDOS Error Codes, AmigaGuide, the IFF, Commodities, and much more.

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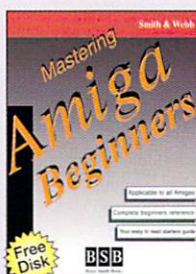
Smith & Smiddy, 368 pages, \$27.00, ISBN: 1-873308-08-6



This book teaches you to use and care for all types of disks and drives in order to minimise the risk of problems, get a better understanding of how they work and what to do if things go wrong. Topics include installing software, copying and moving files, encryption and security, disk repair and back-up, formatting and fast filing, floppy, Rad, Ram and CD's.

Amiga Disks and Drives

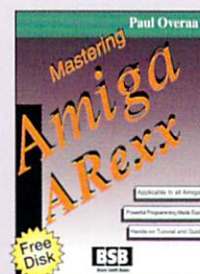
Paul Overaa, 256 pages, \$23.00, ISBN: 1-873308-34-5



Written with the sole aim of getting you through those soul-searching first months with your Amiga, it doesn't promise to make you an expert in any one topic but will give you the essential foundation stones from which you can progress. Step by step advice on specific subjects is balanced with general advice on all major subjects relevant to the Amiga.

Mastering Amiga Beginners

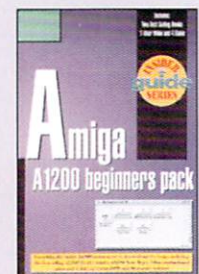
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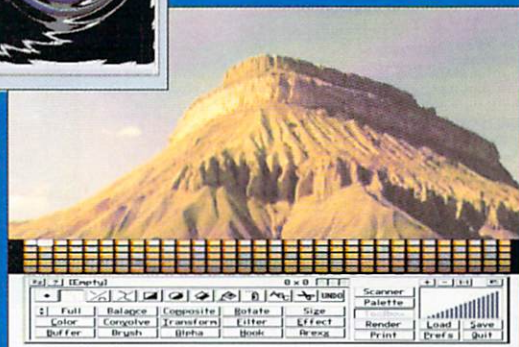
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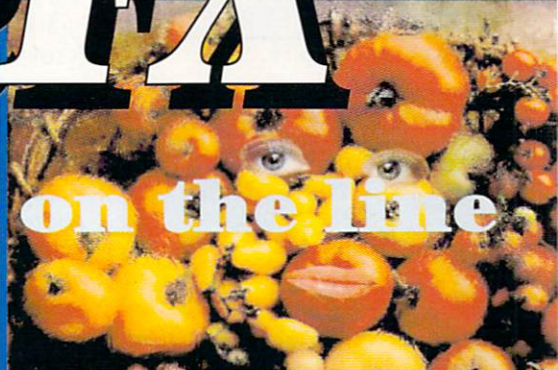
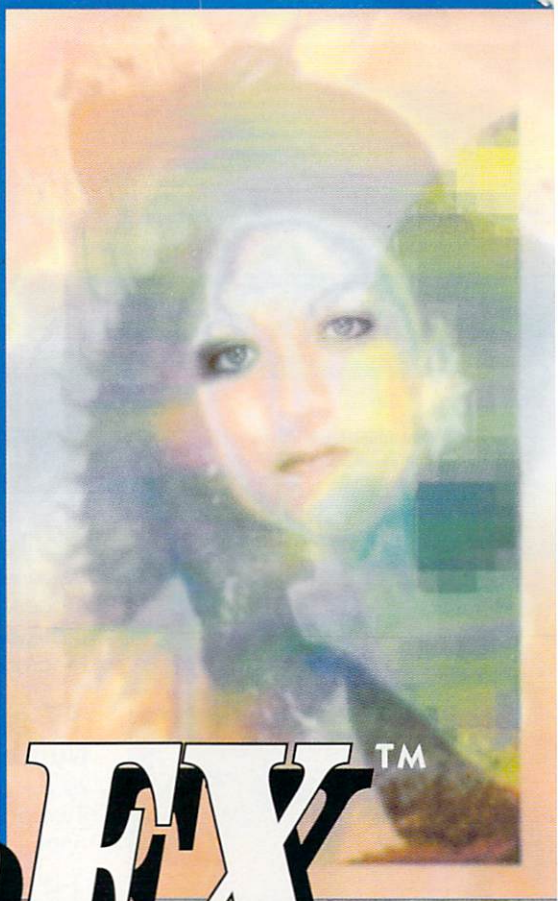
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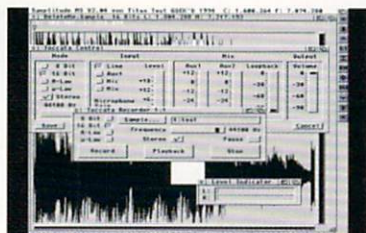


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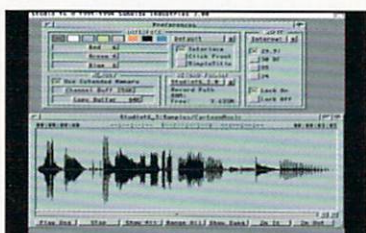
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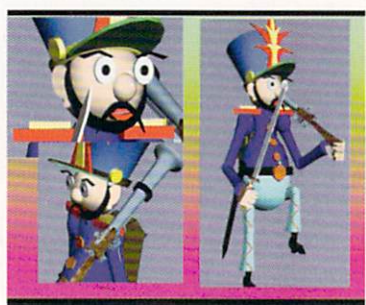
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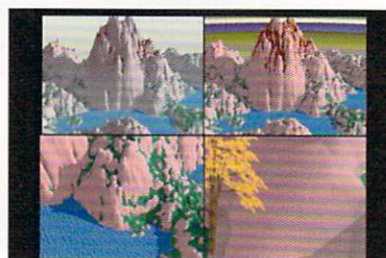
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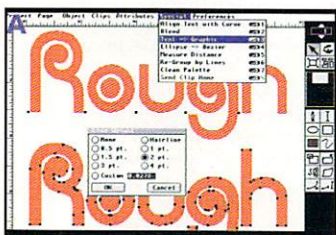


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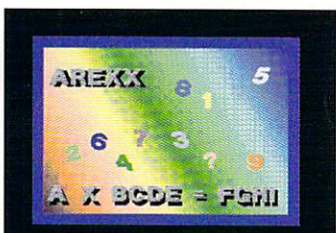
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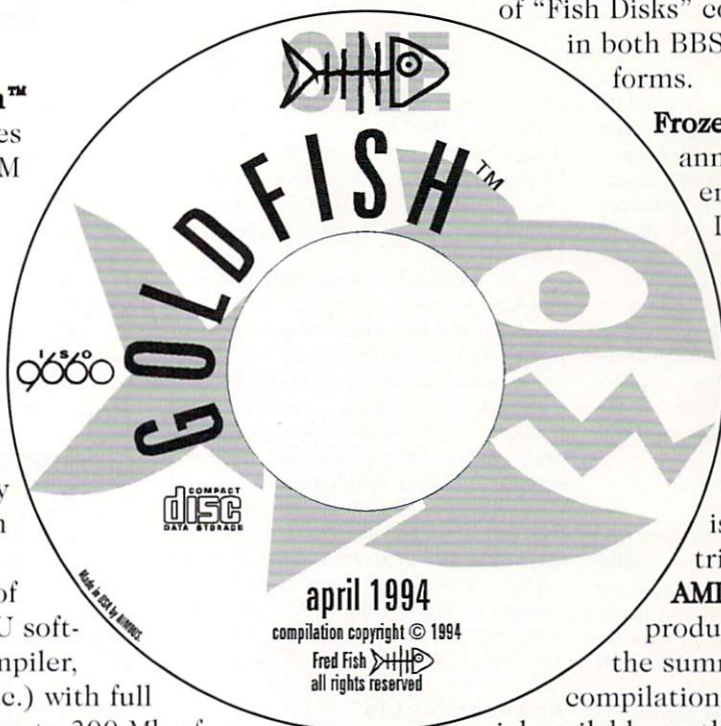
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EDITORIAL CONTENT

Jay Miner

The Amiga has lost its most important founding father



The news was not reported over the wire services, across the front pages of major newspapers, or attached to the end of television news broadcasts. The information was passed solemnly by telephone and then, even more fittingly, by a network of electronic bulletin boards. The man who had conceived and created the Amiga had died. Jay Miner, at the age of 62, died on June 20, 1994 due to complications from kidney failure.

Most of us, myself included, never realized the full extent of Jay G. Miner's impact on the computer industry. The following is an obituary supplied by Jay Miner's bride of 42 years, Caroline Miner.

Jay G. Miner 1932-1994

Jay G. Miner was born in Prescott, Arizona, on May 31, 1932 and raised in Southern California. He served three years in the Coast Guard on the East Coast during the Korean War. He graduated from the University of California, Berkeley, in 1958 with a degree in Electrical Engineering.

Mr. Miner's career started soon afterwards, and his resume reads like a history of Silicon Valley. He loved start-ups, and his enthusiasm and gentle leadership were a source of inspiration for all who knew him.

Mr. Miner was best known as the developer of the Amiga computer, a machine embodying in 1984 many of the multimedia, graphics and multi-tasking concepts only now becoming common in personal computers. His wide talents embraced projects including heart defibrillators, the chips in many Atari video games, and some of the first digital voltmeters and calculators.

His interests were many and varied, but his love of boating was predominant.

He is survived by Caroline, his wife of more than 42 years, and by his two nieces, Linda Heisig of Holt, California, and Robin Beers of San Diego, California.

A memorial service was held on July 23 at the Palo Alto Unitarian Universalist Church in Palo Alto, California.

From The San Jose Mercury News

Mark Lundstrum of the *San Jose Mercury News* (July 22, 1994) wrote, "For the Atari he developed the Video Computer system

(VCS), which put its games in millions of homes, and then he went to work on the design for the Atari 400 and 800 computers. He put his touch on the chip that is central to the Ventritex implantable cardiac defibrillator that can be programmed externally."

Mr. Lundstrum discussed Jay Miner's and Amiga Corp. co-founder, David Morse's, most notable achievement. "The Amiga computer, which in the early '80s produced color graphics that only today are becoming commonplace in PCs, created a community of avid adherents. It was Mr. Miner's dream to design a low-cost machine that could run several programs simultaneously, handle video and do it all in color. An Amiga did that for less than \$1300 (a basic model sold for \$750). When Commodore acquired Amiga in 1984, the legion of Amiga loyalists thought the world would beat a path to the better-mousetrap door. It didn't happen. The Amiga languished."

An Incredible Life

A good many of the people I talked to, when discussing Jay Miner, acknowledge the peculiar coincidence that Jay Miner was alive to see Commodore stumble and fall. Most wonder if he believed the Amiga would ever gain the prominence he had originally designed for it. Their questions prompted me to remember another incredible life.

In the early 70's, PBS ran a series on the life of Leonardo da Vinci. Through several episodes they chronicled the great man's life from his childhood to his death. They described his masterful inventions, his wondrous discoveries, his probing mind, and his valuable contribution as a fine artist.

In one episode they discussed a disagreement he had with a young upstart artist, Michelangelo. Apparently both men had discovered a use for a long abandoned piece of marble. When both rose to claim it, the affair went to the courts. Leonardo was defeated in his bid for the stone and Michelangelo went on to create his statue David from it.

This defeat set the stage for the way Leonardo could have viewed his life. At the time of his death, his greatest works were

being passed over by the works of younger artists. His masterpiece, *The Last Supper*, was beginning to fade. Many of his notes were either lost or forgotten. Most of his inventions were never built or utilized. In the end, he was living as a guest on the goodwill of patrons.

Leonardo da Vinci's greatest accomplishments were not realized within his time. His contribution to the Renaissance or even the Renaissance itself was unknown when he died. Yet today, all of us consider da Vinci's work as exceptional.

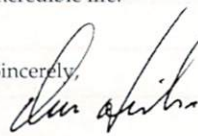
Jay's Legacy

Jay Miner's contribution to the Atari VCS, Atari 400 and 800 computers, and the Amiga are documented above. For many people, it was Jay's work that supplied us with our first touch of affordable consumer computing. His work at Atari opened the door for millions of people to experience what a computer was capable of doing.

At Amiga Corp., he refined that vision and created a computer (while most of the companies' executives believed he was building a game machine) that revolutionized the way the market looked at computer capabilities. While he did not coin the phrase "Multimedia," he did create the system that first made the concept possible and, in the process, blasted a wake-up call to competing computer platforms.

Unfortunately, Jay never saw either Atari or Commodore continue the advantage he helped to create. But neither Jay's memory nor the viability of the Amiga will pass easily. Bidding continues on the Amiga even at this writing and Jay's vision still directs many in both hardware and software development. We owe a great deal to Mr. Miner and his work. Who knows, several years from now, maybe PBS will discover the true story and do another series on an incredible life.

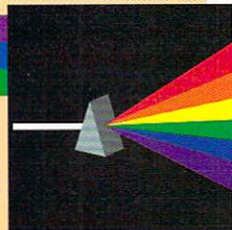
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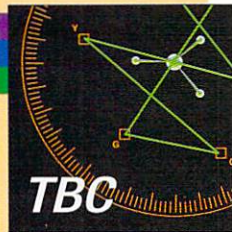
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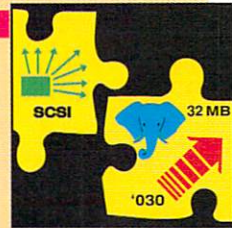
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TBCPlus™ This professional quality, all digital time-base-corrector (TBC) uses state-of-the-art 8-bit 4:2:2 video signal processing... *Plus* it provides a real-time video frame-grabber and 16.7 million color frame-buffer... *Plus* there is a full SMPTE/EBU time-code receiver/generator... *Plus* this incredible product will transcode composite and Y/C inputs... *Plus* a 3 channel video input switcher (in composite and Y/C)... *Plus* programmable video special effects!



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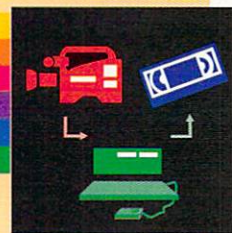
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IV-24™ 2.0 — The Ultimate Genlock This is what you have been searching for in a professional quality genlock for your Amiga 2000, 3000 or 4000. This integrated hardware design provides the crispest, cleanest genlocked video on the Amiga desktop. With options for RGB, composite, SVHS, Betacam and M-II compatible inputs & outputs as well as a 24-bit, 16.7 million color frame-buffer and real-time framegrabber/digitizer, this is *the* Amiga genlock every professional needs. Powerful included software completes this picture as the Ultimate Genlock.

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G-Force '030 Combo™
GVP's classic Combo card accelerates your Amiga 2000 to new heights! This integrated design slips into the processor option slot in your system and instantly provides dramatic performance improvements. Easily add up to 16MB of fast 32-bit RAM. Gain expansion and versatility with our powerful SCSI II interface, allowing you to connect up to 7 devices such as hard drives, SyQuest removables or CD-ROM drives.
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Bring the world of SCSI within your reach with this easy-to-install board. Instantly gain access to thousands of peripherals such as hard drives, SyQuest removable media and CD-ROMs. Add up to 7 devices to your Amiga 4000 and smile. As a leader in Amiga peripheral technology since 1988, we still maintain support for A2000 owners too, even providing 8MB of RAM expansion on the card. Advanced surface-mount technology allows any user to mount a 3.5" drive directly to the card, providing for maximum convenience. Get the GVP SCSI difference!

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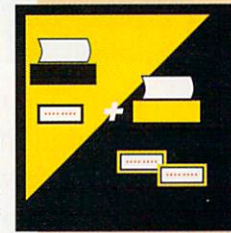
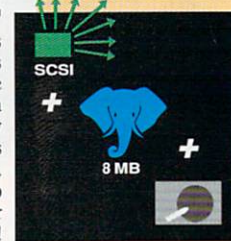
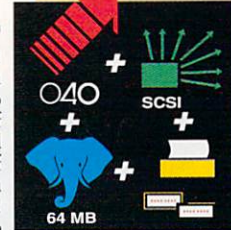
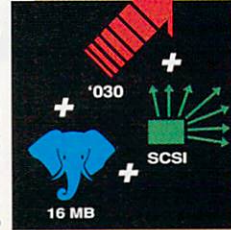


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Clearly Superior! This is the quietest, most professional and attractive digital sound sampler yet made. Assembled of high-impact clear polycarbonate, this is the sound sampler to own for the Amiga. The versatile Digital Sound Studio software includes a multifaceted program for sampling, editing, song composition, stereo sound playback as well as creation of .MOD format songs.

CIRCLE 340 ON READER SERVICE CARD



A 500
A 600
A 1200
A 2000
A 3000
A 4000



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657 CLARK AVENUE KING OF PRUSSIA, PA 19406 • USA
PHONE 215•354•9495 • FAX 215•337•9922

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Circle 105 on Reader Service card.

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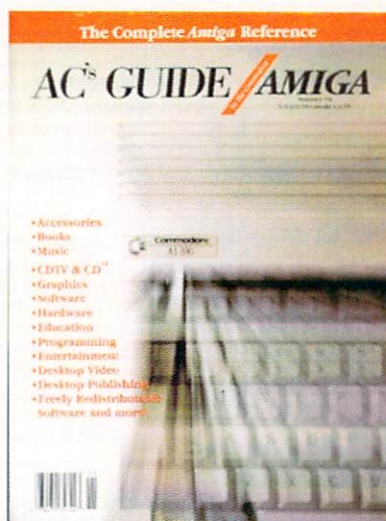
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Amazing Computing, the first Amiga monthly magazine, remains the first in new product announcements, unbiased reviews, and indepth reporting. AC's unique columns like *Roomers* and *Bug Bytes*, step-by-step programming articles, and entertaining tutorials have made it the magazine of choice with devoted Amiga fans. With AC you remain on the cutting edge of Amiga product development.

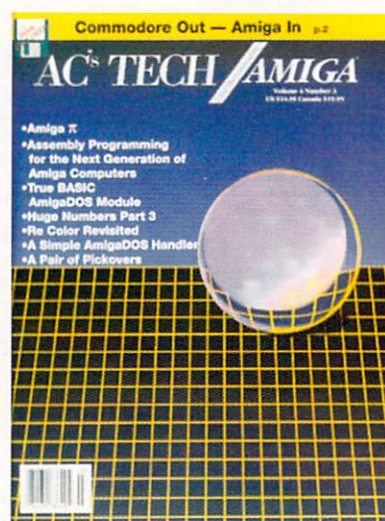
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NEW PRODUCTS

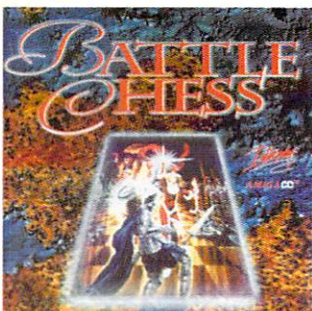
and other neat stuff

The following are press releases and news announcements from Amiga vendors and others. While Amazing Computing maintains the right to edit these entries, the statements, etc. made in these reports are those of the vendors and not Amazing Computing magazine.

Battle Chess

For CD32

Like playing chess? Then this game is for you. This CD32 game has a tutorial for those who have never played chess

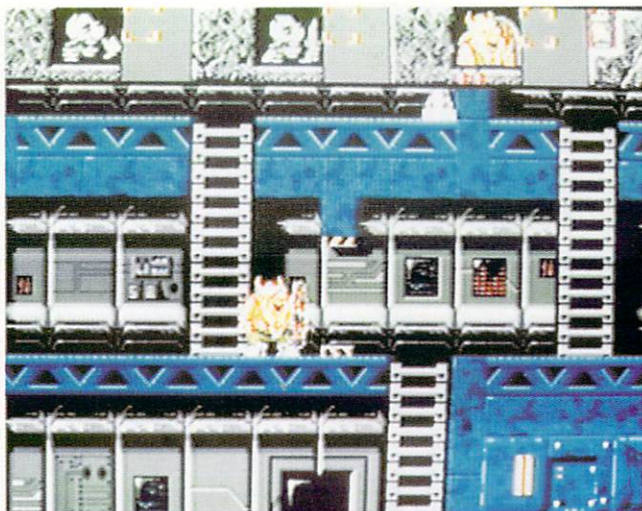
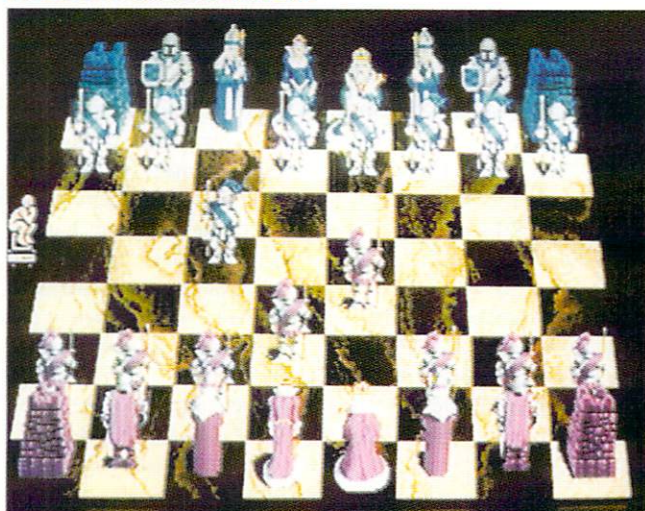


before, or if a refresher course is needed. The pieces come forth and speak for themselves, explaining the game play. You can also fast forward through the tutorial and begin direct play.

Battle Chess includes a Moves Menu which allows control of the pieces and position of the game. Included are commands such as ForceMove which will move the CD32 faster if it is taking too long to make a move, SuggestMove for those stuck and need a hint for their next move, and Replay which allows you to fast forward one step at a time to the end of the current

Battle Chess

It will teach you chess as it defeats you. Multiple settings allow you to create a perfectly matched opponent.

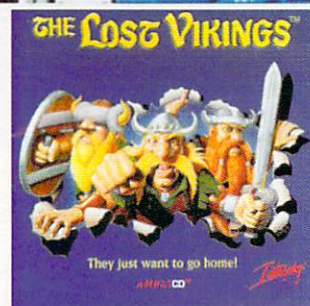


The Lost Vikings

Three extraordinary characters trapped on an alien spaceship.

game. The Settings Menu allows the player to choose what side and what Board to use. You can play on either a 2D or 3D Board, but only the 3D Board has the animated pieces. The LevelsMenu gives you control of the Intelligence of your Battle Chess CD32 opponent. The higher the level selected the better and longer Battle Chess will think. So brush up on those moves and prepare for a challenge.

Interplay Productions, The Barn, St John's Yard, Main Road, Fyfield, Oxon UK OX13 5LN, Tel 0865 390029, FAX 0865 390213. Inquiry #211



must help them find their way home, but each mysterious door you help them through throws them into different eras in time and new enemies! The game promises hours of adventurous fun with hundreds of mind blowing puzzles to play and conquer in over 35 levels of play. Each Viking has his own attitude which comes alive as they talk to each other in cartoon captions while taking you through worlds such as Prehistoria Egypt, The Great Factory, Wacky World, and more.

Interplay Productions, The Barn, St John's Yard, Main Road, Fyfield, Oxon UK OX13 5LN, Tel 0865 390029, FAX 0865 390213. Inquiry #212

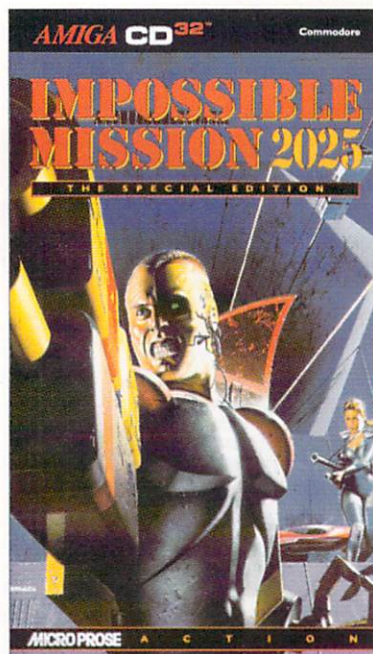
The Lost Viking

For CD32

It starts out just like any other day of Nordic seafaring when Erik the Swift™, Baleog the Fierce™, and Olaf the Stout™ are suddenly sucked into an alien spaceship. You

Special Thanks

Some foreign Amiga and CD32 games have been provided by Amigaman, Computer Basics, Inc., 1490 N. Heritage, PA 16148, (800) 258-0533, Fax (412) 962-0279, & British Magazine Distributors.



Mission Impossible 2025 The Special Edition Robots and traps in a desperate maze.

Impossible Mission 2025 The Special Edition

For CD32

2025 AD. The evil Elvin Atombender has built a top-secret high-security tower. He has filled it with powerful and dangerous robots. He is about to unleash this menace on an unsuspecting world. Your mission: Get in there and stop him!

Three Agents are available to help you in your quest, Tasha - Hyper Gymnast, Felix Fly - Riot Ranger, and RAM 2 - Renegade Robot. Time is of the essence as it is believed that

Elvin is planning an escape to the Moon in a rocket based inside the Tower. Not only is time against you, but many types of robot guards will be looking to do you in as you progress to the higher floors. As you search take and use whatever you can. Travel options include running, somersaulting, using elevators/lifts, or riding the mono-rail.

**MicroProse Ltd, The Ridge,
Chipping Sodbury, Bristol UK
BS17 6AY.
Inquiry #213**

Insight Dinosaurs

For CD32

This is the second title in the 'INSIGHT' series for CD32, CDTV and a570 owners. Insight Dinosaurs was produced in association with The Natural History Museum, London and features the work of world renowned Dinosaur illustrators. This unique title brings to life these long dead giants of the past through photos, illustration, computer graphics, motion video, text, narration and sound effects.

Dinosaur A-Z, Death of the Dinosaur, Anatomy, Attack & Defence, Carnivores, Herbivores, Shifting Continents, Climate, Fossil Hunters, Fossil Hunting, Timeline, Family Tree and Funosaurs are some of the items explored. A shipping date of June 27th, 1994 is expected with a price of £39.95 inc VAT and P&P (25% discount for registered Pandora's CD owners and Educational Institutions).

**Optonica Ltd, 1 The Terrace,
High Street, Lutterworth,
Leicestershire, UK LE17 4BA,
Tel: +44 455 558282, FAX: +44
455 559386.
Inquiry #214**

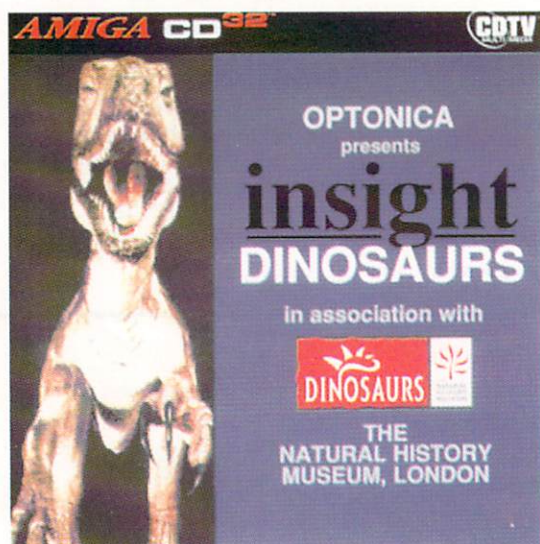
Bump 'N' Burn

For CD32

Prepare yourself for the world's craziest race. Once a decade drivers come from all over Toonia to test their skill in a no holds barred contest of speed and destruction called the Bump 'N' Burn championships. The current champion is Count Chaos in a car called the Skull - Crusher Special. Undeclared since the tournament started, he is a ruthless driver who will stop at nothing to retain his title.

The contestants face numerous challenges as they travel through each of Toonia's seven regions. The horror of the Haunted Forests, the danger of the War City, freezing conditions in the Polar Zone and trip into Future World. Only one thing is certain, your opponents will use devious schemes to make sure YOU don't reach the checkered flag first. Game features include 8 original characters, secret levels, an innovative weapon system, 16 varied tracks, 3 different play modes, split screen and two player mode.

**Grandslam, Tel 44 81 680-
7044, FAX 44 81 688-7535.
Inquiry #210**



(306) 953-8960
(306) 953-8961

9:30-6:00 Mon-Sat (Mountain)

Amiga 4000 Upgrades	
1MB Simm	\$ 39**
4MB Simm	\$ 159**
8MB Simm (60ns)	\$ 339**
16MB Simm (60ns)	\$ 689**
32MB Simm (60ns)	\$ 1349**
1210 MB IDE HD	\$ 199**
3340 MB IDE HD	\$ 299**
5420 MB IDE HD	\$ 399**
8220 MB IDE HD	\$ 499**
**Add to any 4000 system!	

\$6,599
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0-20lbs	95/lb	2 Days
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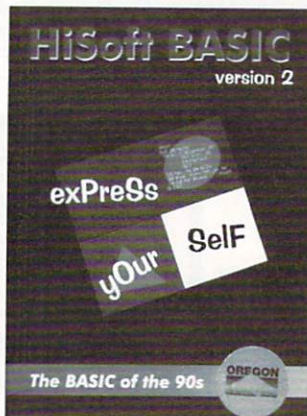
Computers & Monitors

CD-32 or A1200	\$19	5 Days
A4000 or 4000T	\$39	5 Days
Monitor	\$29	5 Days

Next Day & Second Day Air is also available.

These are the average rates & delivery times in business days for ground service within Canada & the USA and include all regular shipping, handling, duty, brokerage, customs clearance and door to door delivery. Some orders may require special handling, installation etc., therefore this is only a guideline. Delivery rates & times are not guaranteed. UPS/FEDEXMail will accept no claims for damages without registered insurance. Insurance is 4% of invoice.

Circle 111 on Reader Service card.



HiSoft BASIC 2

Oregon Research has announce a major upgrade to HiSoft BASIC and BASIC professional. In HiSoft BASIC Version 2, program development takes place in an integrated editor-compiler-debugger environment. The new multi-windowed editor, with special Workbench 2 and 3 support is specifically designed to aid program development. It features bookmarks, mouse block marking, macros and is fully user configurable. The compiler is twice as fast as previous versions yet retains compatibility with previous versions as well as Microsoft QuickBASIC and AmigaBASIC. HiSoft BASIC 2 comes with 640 pages of documentation including an extensive tutorial section. HiSoft BASIC 2 works on all Amiga systems with 1Mb or more of memory and one floppy drive, 2Mb of memory and a hard drive are recommended for large projects or to take full advantage of Workbench 2 and 3 features. Retailing for \$129.95, it is available now. Upgrades from any previous version of HiSoft BASIC, BASIC Professional, or Power BASIC are \$69.00 + \$5.00 S&H.

Oregon Research, 16200 SW Pacific Hwy, Ste 162, Tigard, OR 97224, (503) 620-4919, FAX (501) 624-2940. Inquiry #203

MaxonMAGIC

MaxonMAGIC is a modular screen saver and system audio manager that will put FUN back in your Amiga. Over 20



colorful, animated, and amusing screen savers that will entertain while protecting your monitor from burn-in. Sound samples or songs can also be added to each screen saver. MaxonMAGIC screen savers run on all Amiga's and with all add-on graphics boards that support Workbench emulation.

MaxonMAGIC is also a sophisticated system audio manager, add on your choice of samples to a variety of system events, keys, alerts etc. Retailing for \$49.95, MaxonMAGIC is available now. **Oregon Research, 16200 SW Pacific Hwy, Ste 162, Tigard, OR 97224, (503) 620-4919, FAX (501) 624-2940. Inquiry #204**

Address It! v1.5

Legendary Design Technologies has announce that v1.5 of their addressing package for the Amiga computer is now shipping. There are many new features, most notably the brand new "3D" interface look, improved exporting and importing that now supports Final Writer, new postal formats that make the program useful in all countries of the world, and improved laser/ink-jet support.

Registered owners of previous version can upgrade to v1.5 for only \$7.50 US including shipping. If proof of purchase is provided, those who bought the product after June 15, 1994 will receive a free upgrade.

Legendary Design Technologies Inc, 25 Frontenac Avenue, Brantford,

Ontario CANADA N3R 3B7, Phone/FAX (519) 753-6120. Inquiry #205

MultiLayer

Prime Software announces the release of MultiLayer, the digital layering, compositing and effects tool for the Amiga. Unlimited layering of motion video or stills with a full timeline/editing interface has been made simple. Multiple sequences of graphics and video can be composited using Image Mapping, Luminance-keying, Alpha keying, Chroma keys and more. Image sequences can be generated in resolutions from 100 x 100 pixel anims to film resolutions of 4800 x 3000 pixels and beyond in full 24-bit color. Available for the introductory price of \$89.95 plus \$4.00 S&H (until September 1, 1994) it requires Nova Design's Image-FX or ADPro for compositing and Workbench 2.0.

Prime Software, 31164 Country Way, Farmington Hills, MI 48331-1035, Tel (810) 661-3393. Inquiry #206

Amiga Air & Space Software

Explore the Heavens with your Amiga and this 12 disk collection of public domain and shareware Space Science related software. Plot planetary motions, create personalized sky charts, track hurricanes, travel to Mars, study stellar phenomena and much more. A set of 12 disks is available for \$29.95 (includes shipping) or individual disks are available.

Kinetic Designs, PO Box 1646, Orange Park, FL 32067-1646. Inquiry #207

MediaEditor 3.9.8

MediaEditor 3.9.8 is now shipping with a brand new manual and lots of new features, like variable screen resolution, point-and-click A/B - Roll, Toaster, VBOX, and VISCA control. You can even use Video Director and Nucleus control cables. Launch ARexx scripts from third party

programs like TRexx, Sunrise, and Bars & Pipes.

Industrial decks like the Panasonic AG-7750 and AG-5700, the JVC BR-S605U, the Sony VO-9600, EVO-9850 and CVD and more are included in a new industrial driver set. The new RS-422 controller interfaces 9-Pin industrial decks to the Amiga both through the main serial port and expansion ports, and RS-232 decks need no controller at all. As a MediaPhile customer you can upgrade to the latest hardware and software for 50% off list. A software upgrade with new manuals and free technical support is just \$75.

Interactive MicroSystems, Inc., 9 Red Roof Lane Ste 2, Salem, NH 03079-2929, Tel (603) 898-3545, (603) 898-3606. Inquiry #208

Phonepak Developer Announces A4000 Fix

Atlantis Design Group, developers of PhonePak VFX, announced the availability of a fix for the Zorro II DMA circuitry of the A4000/040 computer. A defect prevented PhonePak from working reliably in most cases, causing voice messages to change pitch or become garbled. Service Management Group of Columbia, MD will perform the necessary upgrade to the Commodore 68040 processor board for \$99. Interested parties should contact SMG at 610-363-4003 for further information.

The culprit was the U209 chip on the '040 processor board. According to Christopher Darsch, President of Atlantis, they were able to convince Commodore to fix this problem in time for the first run of the 4000 tower but CBM liquidated before the information could be passed to consumers and dealers. Darsch gathered the information and formed an alliance with SMG to do the upgrade.

Atlantis Design Group, Inc., 5551 Riverside Dr, Richmond, VA 23225, (804) 231-2302, FAX (804) 231-2328. Inquir #209

Toccata

Reviewed By: Douglas J. Nakakihara

Toccata (\$499) is a new 16-bit sound board for the Amiga manufactured by MacroSystem in Germany. Noahji's has picked up U.S. distribution of this as well as other MacroSystem products like Retina and VLab, previously distributed by MacroSystemUS (no relation). The board features direct to hard disk recording and playback. There are three stereo line and one stereo microphone inputs, and one stereo output. Audio can be sampled all the way up to CD (44.1KHz) and DAT (48KHz) rates. The board is capable of 16 channel 16-bit or 32 channel 8-bit playback, but current software only gives you four channels at most. (Look for this to change soon!)

The board fits into any Zorro II slot. Three quarter-inch stereo jacks are mounted on the rear of the card (quarter-inch stereo to RCA adapter cables are included). Two of these are for line input and the other is the output jack. The third line input and the microphone are mini jacks located on the top of the card. If you are willing to give up another slot, an adapter that cables these to quarter-inch jacks mounted on an extra expansion slot cover is included. You could also drill holes in your case or find another means to feed the small cables out the rear of your Amiga. (I found it strange that this extra bracket is mentioned later in the manual and not in the installation section.) The three inputs are referred to as Line, AUX1, and AUX2.

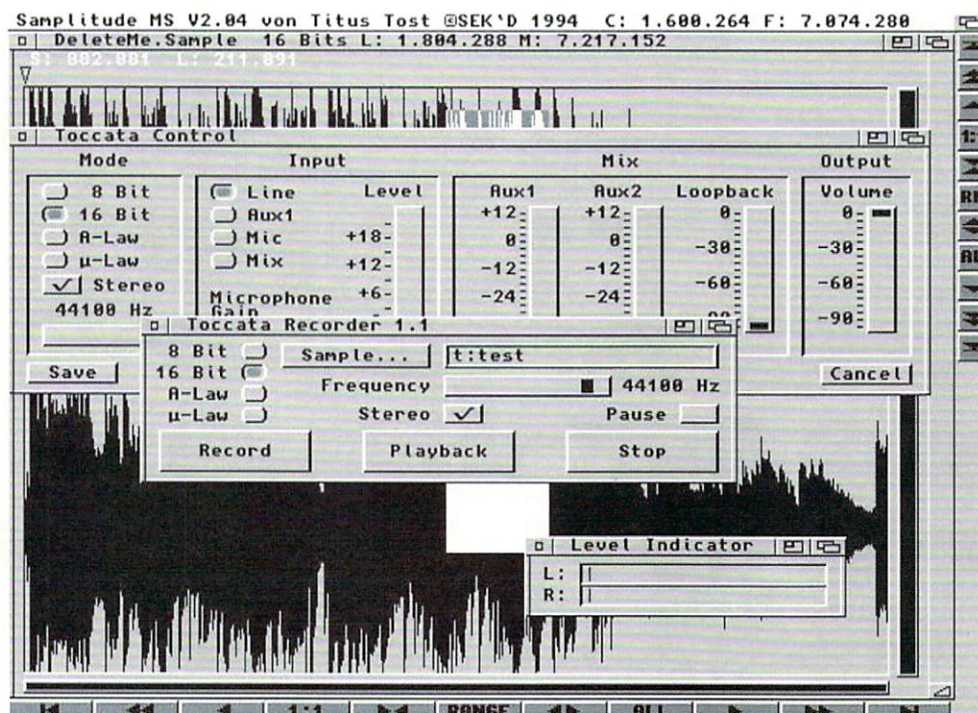
Toccata Software

The Toccata software is modular in design and opens several windows. The ToccataControl window is where you configure the board. For sampling mode, you can choose 8-bit, 16-bit, or two compressed forms, mono or stereo, and set the sampling rate. Input

selection and level is also set here. There is an option of mixing the two auxiliary inputs. Finally, you can set the output and loopback levels. Loopback allows you to monitor what is being input into the Toccata. Input level indicators can optionally be displayed. When they are, the loopback fidelity is reduced. All of the interface gadgets, like volume and input level, work in real-time as do the level meters. ToccataControl has extensive ARexx support.

I'm not sure why, but the ToccataRecorder program duplicates all of the mode settings in the ToccataControl window and will override these setting when you record. To record, like a basic tape recorder, you click the Record button. When you want it to stop you click Stop. To play what you've recorded, you click Playback. Pretty simple, eh? You also define the name of the file you want the sample saved to in this window.

There are also two player programs included. One is called ToccataJinglePlayer. This is an interesting program that took me a while to figure out. Besides just being a sample player, it allows you to mix whatever is connected to either AUX1 or AUX2 with a



All of the interface gadgets, like volume and input level, work in real-time as do the level meters. ToccataControl has extensive ARexx support.

sample. All of the samples must be in the same directory and their filenames will appear in a little window. This would be great for playing sound effects on demand, like for a morning radio show or something like that. You would run the normal audio through the Toccata using, say, AUX1 and then when you needed a sound effect, just double-click on it. This program has an AREXX port too.

The ToccataPlayer plays single samples and was designed for use from the CLI. When run from the Workbench, a file requestor will appear, but it will not play anything.

Public Screens

Many Amiga programs run on public screens. This means that other programs can open windows right on their screens and look like they are part of that program. It's exactly like opening a window on the Workbench, except the window opens on another program's screen. All of the Toccata programs support public screens and the implementation is one of the best I've seen. A list of running public screens can be brought up from the menu and you simply click on the desired one. You can also set the public screen name using the CLI. In fact, this is the only way to set it for the ToccataRecord program.

Sound Quality

16-bit sound samples are awesome to be sure, but 8-bit samples are possibly more impressive. By that I mean, the 8-bit samples sound many times better than what you can get out of a stock Amiga. The manual explains that the Toccata board digitizes the sound using 16 bits but compresses it on-the-fly into 8 bits. On playback, it decompresses the 8-bit sample in real time. This results in substantially better signal-to-noise ratio than if the audio was sampled directly into 8 bits. The two compressed sample formats are also impressive. Compared to 16-bit samples, file sizes are cut in half with little noticeable difference in sound quality—at least to my post-rock band ears.

Editing

A full-featured 16-bit sample editor called Samplitude MS by SEK'D is bundled with Toccata. It provides a means to fine tune samples. This is an extremely comprehensive sample editor and has it's own 78-page manual. If your samples are extremely large, Samplitude can edit them on your hard disk, which eliminates the need to load them entirely into RAM.

Samples are opened in their own window and you can have multiple samples opened at the same time. You can even cut and paste between different samples. If you like keyboard shortcuts, Samplitude has a ton of them.

Samplitude has the unique ability to display up to three independent windows of the same sample. This keeps you from having to constantly reselect different ranges when doing serious editing.

All of the standard sample editing features you'd expect are there, like fades, echo, cut-and-paste, etc.. It works quite nicely with Toccata stereo samples and I can see why it is bundled. The Playlist is a neat feature that allows you to program different parts of a sample to play in a certain order. I have only seen this in Oxxi's AudioMaster program, but that only works with native Amiga 8-bit samples. In a certain sense, it is like creating a sound tracker module. In fact, an eight-channel tracker-like program that supports Toccata, called MignonTracker, should be available soon.

Name Calling

All sample editors allow you to highlight a range in a sample. This allows you to display the range full-screen for detailed editing or lets you apply a special effect to only a certain portion of the sample. Samplitude includes a handy feature similar to what are called bookmarks in wordprocessors. Basically you can assign names or keys to multiple ranges in a sample, which allows you to quickly reselect them. This naming feature is also implemented for single (cursor) points in a sample.

Projects

In addition to loading and saving samples, you can save and load projects. Projects retain all of the editing parameters like range names. This can be a real time saver if you are editing the same sample over several sessions.

You can record directly to the Toccata from Samplitude. The manual indicates that there is a control gadget to bring up the Toccata mixer window, but I couldn't find it. However, it was an easy task to launch ToccataControl from the Workbench and then specify the Samplitude public screen. Samplitude includes real-time analog-looking VU and DB meters.

Samplitude Pro II

There is an advanced version of Samplitude called Samplitude Pro II available according to the manual. One important feature this adds, is the ability to transmit and receive information from certain MIDI samplers, including ones from AKAI, Roland, EMU, Sequential, and Yamaha.

Requirements

At 44.1kHz, one minute of 16-bit audio requires about 5MB of storage space (less with compression). If you are recording to a hard disk, an '020-based Amiga or better is recommended. If you want to simultaneously playback more than two tracks of audio, you'll need an '030 or better and a fast hard disk. 68000-based Amigas can record to RAM and reduce the number of tracks or sampling rate.

The Manuals

To say the least, both the Toccata and Samplitude manuals are sometimes difficult to follow and understand, but not impossible. This reflects the sometimes literal English translations from German. There are also some updating that needs to be done, which isn't the fault of the translators.

Summary

Toccata will be incredible when 16/32-channel software becomes a reality. As it is, Toccata and Samplitude are still solid performers. MediaPoint compatibility is reportedly already done and if Scala support becomes a reality, you will really have something. A hardware/software add-on for SMPTE timecode support exists according to the manual, but NoahJi's couldn't comment on pricing or U.S. availability yet. If this is affordably priced, it makes the board much more useful. Currently, Toccata lacks the power and polish of SunRize's Studio16 software, but Toccata provides a lot more bang for your buck.

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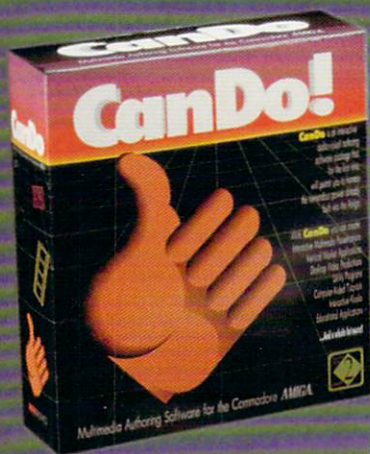
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Snow Words and Nimble Numbers

by Eric Nixon

Two good, old-fashioned learning experiences for Spelling & Math.

With the dearth of educational software available, Amiga owners must continue to search farther and farther afield for new titles. Snow Words and Nimble Numbers certainly fit the bill; they are produced by Hokianga Software of New Zealand and marketed by Lascelles Productions, who have previously released such titles as Back to Basics, Word Construction Set, and Kim.

Catch a Falling Letter

Snow Words is best described as a combination of Scrabble and Tetris. Players collect falling snowflakes, each of which contains a randomly generated letter. The letters are used to make a word and points are awarded on the basis of the word's length, the value of the letters used, and the speed you've chosen.

There are four different point values assigned to letters, reflecting their ease of use. They range from one point for the most common letters up to six points for the most obscure. There are also golden snowflakes without an enclosed letter. These can represent any letter you wish; unfortunately, you must make up your mind quickly, as you are penalized from the time you chose a golden snowflake until you type in the letter you wish it to represent.

While you are playing, you can choose to listen to some pleasant music and a computerized voice reading the words as you enter them. If neither of those options appeals to you, the game allows you to play in silence. There is also a pause mode to allow younger players a bit of time to think; unfortunately, the screen goes blank, so it is not much of an aid. On the other hand, there is also a STOP mode, which freezes the snowflakes mid-fall. This is not recommended, however, as you are heavily penalized on the points counter while the game is stopped, in much the same way as with the golden snowflakes.

Players must also rush against a melting snowman, an ingenious timer which ticks silently away as the game progresses. When the snowman turns to a puddle, the game is over and the player is immediately taken to a score sheet containing all the spelled words. At this point, a parent or teacher is expected to go through each word and mark it with a check mark or the default "X". Points are awarded for correct words, but not deducted for incorrect ones.

Helpful Suggestions

Snow Words is recommended for players five and up, but only five year old geniuses should attempt it. The game was totally

beyond my five year old assistant and only usable by my six year old tester with great assistance. The penalty counter for stopping the game or choosing a gold snowflake is unfair for younger players; it's a shame it can't be turned off, as little people need time to select a letter and should not be penalized while they are thinking. It is probably best you tell the younger players not to choose the gold snowflake or stop the game, as the penalty counter rings up so fast it can prove to be very discouraging.

On the other hand, seven year olds and up will get a lot of enjoyment out of the program. They will like the challenge of racing against the clock trying to make new words. If they happen to misspell a word or make up a new one that doesn't appear in any dictionary, they don't lose any points, so there's no harm. If, however, they manage to string some longer words together, they'll be pleasantly surprised how big a score they can rack up.

The screenshot shows the 'Nimble Numbers' game interface. At the top, it says 'I WANT TO: COUNT'. Below this are buttons for '+ add +', '- subtract -', 'x multiply x', and '÷ divide ÷'. There are also buttons for '1-5', '1-10', '1-15', and '1-30'. A 'choice' button is visible. Below these are three 'STOP' buttons. The main display shows the equation $7 \times 3 = 21$. At the bottom, there is a 'How Many?' section with a grid of numbers from 1 to 30. The grid is organized as follows:

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30

On the left side of the grid, there is a vertical column of 'STOP' buttons. On the right side, there is a vertical column of 'TOTAL' buttons.

Nimble Numbers helps children learn the basics of counting, addition, subtraction, multiplication, and division.

When the scores are all totalled, they can be printed out with a list of the words created, their points, the players name, and the date. This would be especially useful in a classroom setting.

Snow Words comes on one disk, requires 1MB RAM, and is easily hard drive installable. The installation program is not the standard Commodore one, but is very straightforward and does the job quickly and easily. The manufacturer claims compatibility with all Workbenches.

Small Problems

There are a couple of minor concerns with the program. When it starts, you are prompted to enter your name and press RETURN. Be forewarned that as soon as you do, the game begins, not a minute or 30 seconds or even five seconds later, but immediately.

The speed of the falling snowflakes is adjustable, but just barely. Quite oddly, you can choose speeds of anywhere from 11 to 17 and there really isn't that noticeable a difference; they are all a bit too fast for the youngest players, but I suppose that's part of the challenge.

Finally, once you've started the program, there is no way of quitting, except by rebooting the computer. You can't even abort a game midstream and start again; you must choose whether to play until the end or reboot and begin again.

Overall, I would heartily recommend Snow Words. The packaging is not the slickest around; in fact, it comes in a white video cassette box with a one page photocopied manual. But, the price is most reasonable and the product is certainly good quality. I'd even venture to say that adults will get as much use out of Snow Words as their children. Knowing the popularity of both Tetris and Scrabble, most people will find it hard to resist.

Learning by the Numbers

Nimble Numbers offers a more traditional approach to educational software. It helps children learn the basics of counting, addition, subtraction, multiplication, and division.

Counting is available in groups from 1-5, 1-10, and 1-15. When you select from one of these areas, you are presented with groups of fish and sea creatures in logical patterns. All young children love counting, so this will prove to be a popular activity even with four and five year olds. After a number is selected to match the number of fishies on the screen, a woman's voice reads the number and offers encouragement or a polite, "Try again". The natural digitized speech is a refreshing change from the usual computerized voice heard on many children's programs.

Unusual Rewards

Once your little Einsteins get a little farther along, they will want to try the mathematical problems, which are available in groups of 1-5, 1-10, 1-15, and 1-30. Progression is fast and easy; you'll instantly see the improvement in your children's numerical skills. At the end of each group of ten questions, the computer updates your score, gives a brief comment, and shows a happy face. When your score reaches more than 50, you'll be rewarded with a pseudo-animation that is, well let's just say, different. It's accompanied by a children's choir singing a delightful school song.

Nimble Numbers does not appear to have any special requirements, but the instructions say it is compatible only up to Workbench 2.1. Hard drive installation is done the old fashioned way; just drag the icon wherever you'd like to install it and, like magic, it's installed. I wish all programs were this hard drive friendly.



Snow Words offers spelling challenges in a combination Scrabble™/Tetris™ style.

Back to the Basics

I honestly cannot think of any complaints about Nimble Numbers. The packaging is unexciting and the manual short, much like its sister program, Snow Words. When you first start the program, don't expect to see spectacular animations or 3D ray-traced graphics. This program is simple and to the point. In today's world, we often assume everything has to be high tech and glitzy to keep our children's attention. Perhaps, we should give them a little more credit. My young testers both enjoy Nimble Numbers immensely. They like the big bold numbers and the friendly woman who tells them when they've gotten an answer right.

I also think they like the idea they're learning something, not just playing a game. Call me a Luddite if you will, but sometimes the old ways are still the best.

Software like Nimble Numbers does not come along that often. It's surely not the most sophisticated product on the market, but it does everything it claims to and does it well. A lot of schools would benefit from having such a program available. If there is a place for all the game-based educational titles and free-form experimental programs, there should certainly be a place for a solid, fun, educational product, too. As far as for home use, Nimble Numbers would make a wise addition to your children's software library and fit rather nicely amongst the newer style software that's available.

•AC•

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AMIGA OBERON-2 REVIEW

by Michael Griebeling

Oberon-2 is the latest object-oriented language from professor Nicholas Wirth who also brought us Pascal and Modula-2. Oberon-2 shares many of the features of these precursor languages while simpler and yet supporting the latest object-oriented features like inheritance through type extension and polymorphism by using type-bound procedures. This philosophy of simplicity bucks the industry trend of introducing increasingly complex languages like C++ and Ada which are more difficult to master than their forbearers.

Overview

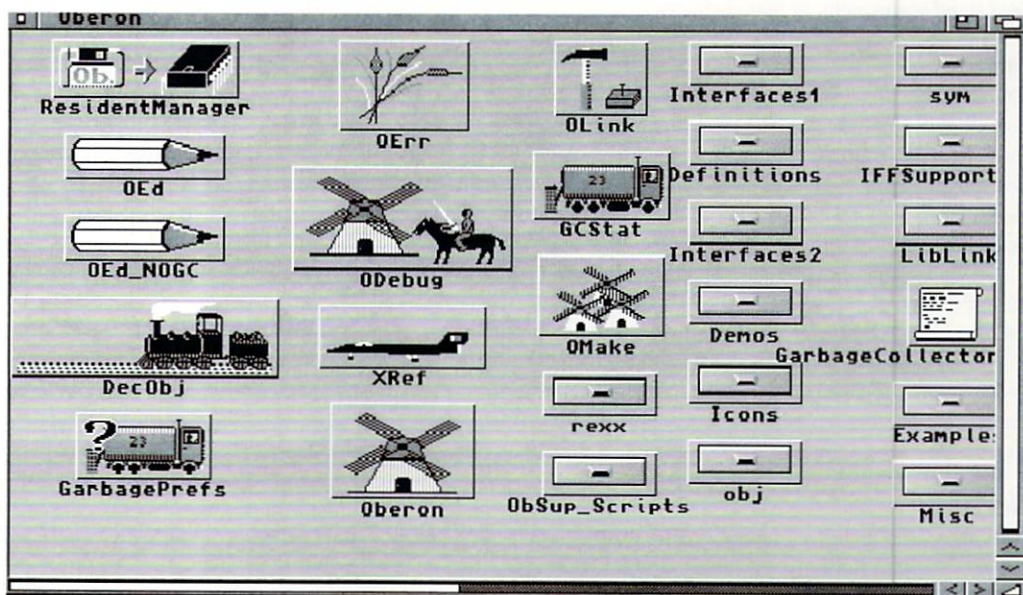
The Amiga version of Oberon-2 (Figure 1), by Fridtjof Siebert, is a full implementation of the language with some Amiga-specific extensions which simplify programming by allowing structured constants (like 'C') and support an efficient method of generating interfaces to external libraries. The compiler is integrated with a full-featured editor in the style of 'TurboPascal' to allow very rapid edit/compile/link/run cycles. The included linker automatically removes unused code segments to produce executables which are usually smaller than the equivalent 'C' program. Also available is a run-time, source-level debugger which features breakpoints, examination of global and local variables, and multiple levels of stepping through the source code. Other tools provide disassembly of object code and executables, automatic production of Modula-2 like interface specifications, creation of Amiga libraries from an Oberon-2 module, generation of variable cross-references, and setting of the garbage collector preferences.

The Compiler

The optimizing compiler is robust and produces code which is usually more compact and sometimes the same size as code produced by the best 'C' compilers. Both small code and small data models are supported along with code generation for most 680x0 family processors (except 68040) and including the 68881/68882 floating point coprocessors. Command line and menu-based options give the ability to selectively enable or disable stack, overflow, scope, case index, return, nil pointer, odd address, and runtime type checking. Other options set local variables to zero, enable register parameters and variables, generate debug information, and use the built-in garbage collector. Batch compilations are also supported where the names of a set of modules to be compiled are included in a file with a '.bat' extension and then supplied as a command line argument to the compiler.

The compiler operates within the context of a project which is defined as a directory containing a minimum of three subdirectories 'txt', 'obj', and 'sym'. The first of these contains the

Figure 1: Oberon-2 by Fridtjof Siebert is a full implementation of the language with some Amiga-specific extensions which simplify programming by allowing structured constants (like 'C') and support an efficient method of generating interfaces to external libraries.




```

txt/ShowIFF.mod
col: 32 line: 31 of 54 chgs: 2 file: txt/ShowIFF.mod
(*-----*)
:Program.      ShowIFF.mod
:Author.       Fridtjof Siebert
:Address.      Nobilitweg 67, D-7-Stgt-40
:Shortcut.     [fbs]
:Version.      1.8
:Date.         02-Nov-92
:Copyright.    PD
:Language.     Oberon
:Translator.    Amiga Oberon 3.0
:Imports.      IFFSupport [fbs].
:Contents.     IFF-Ladeprogramm zum Betrachten von IFF (ILBM)-Bildern.
:Remark.       Aufruf: ShowIFF <filename>
-----*)

MODULE ShowIFF;

IMPORT arg: Arguments,
       I:  Intuition,
       IFF: IFFSupport,
       d:  Dos;

VAR
  MyScreen : I.ScreenPtr;
  WindowDummy : I.WindowPtr;
  Name : ARRAY 80 OF CHAR;
  length : INTEGER;
  Ciapra [0BFE001H]: SHORTSET;

BEGIN
  IF arg.NumArgs()#1 THEN
    HALT(20);
  ELSE
    arg.GetArg(1,Name);
    IF IFF.ReadILBM(Name,{IFF.front,IFF.visible},MyScreen,WindowDummy) THEN
      WHILE 6 IN Ciapra DO d.Delay(3) END;
      I.OldCloseScreen(MyScreen);
    ELSE
      I.DisplayBeep(NIL);
    END
  END

```

Figure 2: Oberon-2's user interface complies with Commodore's Interface Guidelines and makes the process of fixing program bugs much simpler.

source code, the second holds the compiled object code, and the last stores the compiler symbol files. Any number of projects can be used and other projects can be referenced by the compiler through an editable text file which lists all available symbol/object directories. Thus, when these symbol references from other projects are included in the source code, the compiler automatically checks all the directories in this file to find objects which are not part of the current project.

A useful feature is a comment-based macro facility which allows embedding conditional compilation structures within the source code. It is thus possible to use the same source code for different targets without having to rely on a pre-processor. In fact, the libraries included with this Oberon-2 implementation frequently use conditional compilation to have the same source produce object code which either supports the garbage collector or uses stand-alone memory management.

The Linker

'OLink' is the first linker available for non-'C' languages which both accepts standard Amiga object files and will remove unused code segments from the final executable image file. It is thus possible to link in code compiled from other languages, including assembly code, to take advantage of the many algorithms which are available in 'C' without having to translate them into Oberon-2.

Like the compiler, the linker will search the current project for all object files referenced in the file being linked. Added references are also resolved recursively until all symbols have been defined.

During use, the linker has proved to be trouble-free, efficient, and reliable. Other linkers can learn some lessons from 'OLink', particularly in how it removes unused code from the final executable.

The Editor

Although 'OEd' is not my favorite editor, it still is robust and has never crashed or hung-up. My main reason for using it is that it

supports an integrated edit/compile/link paradigm much like TurboText supported M2Sprint. I immediately felt comfortable with this user interface (Figure 2) since it complies with Commodore's Interface Guidelines and makes the process of fixing program bugs much simpler.

In typical use, I create a source file, invoke the 'Compile' menu item to compile the source and the compiler pops up a window to indicate which imported files it is processing. If there are any problems, I click on the compiler window to close it and the editor immediately moves to the first error in the source. The window title bar shows the associated error message. Selecting the 'Next Error' menu item successively cycles through the following errors. By using the 'Make' menu item, I can both compile the current source, link it, and then can execute the resultant program via the 'Execute' menu item.

OEd has a complete ARexx interface sporting 86 different commands which manipulate the current cursor position in a document; delete characters and lines; load, save, and print files; find, search, and replace text; cut, copy, paste text sections; and can invoke any of the integrated compiler menu items.

The editor is extremely configurable and allows the definition of practically any key on the keyboard combined with all flavors of keyboard qualifiers. The menu items can also be completely tailored. OEd supports an undo facility, which is limited only by the user-specified size of the undo buffer.

The Debugger

A full-screen, source-level debugger called 'ODebug' (Figure 3) is available as a separate package. The debugger is extremely useful in replacing the standard 'debug messages' most software designers place in their source code to help find bugs by displaying relevant internal program states and variables. The debugger lets you examine any variable in any module or procedure call. The only caveat is that module variables must be exported in order to be visible to the debugger. By single-stepping through your source

Figure 3: ODebug is a full-screen, source-level debugger lets you examine any variable in any module or procedure call but the module variables must be exported in order to be visible to the debugger.

code, most other program errors can be found. On more than one occasion, a combination of these facilities have saved me countless hours of agonizing over 'debug message' outputs when attempting to pinpoint a particular software problem.

Setting source-level breakpoints is a menu-based, point-and-click operation much simpler than in any other debugger I have used. The debugger breakpoints have a statement-level resolution which makes it easy to set a breakpoint on just the 'a := b' statement in the following source line:

```
IF a > b THEN a := b END;
```

Thus the breakpoint is only activated if 'a > b' becomes true. In addition, boolean expressions (using Oberon-2 syntax) can be explicitly added so that the breakpoint becomes active only if the specified expression becomes true.

Other features allow you to change the type of displayed variables, evaluate standard Oberon-2 expressions, modify variables, show active or called procedures, and save displayed variable values to an external file.

Other Tools

The compiler (Oberon) comes complete with a linker (OLink), an editor (OEd), an error-reporting tool (OErr), and an interface module generator (ModToDef) which produces a summary of all exported objects in the form of a Modula-2-like interface. The debugger (ODebug) includes a make utility (OMake), a library generator (LibLink) which produces Amiga-style libraries and devices from Oberon-2 modules, a disassembler (DecObj) which can handle object files and executable programs, and a cross reference generator (XRef) which produces alphabetical listings of the identifiers defined in a module.

Documentation

The complete documentation comprises a single four-ring binder and includes both English and German documentation. The English manual is for a previous version of the compiler; the German manual contains the most up-to-date information. Each manual contains installation instructions, descriptions of the command line and menu items for each tool, discussions on writing efficient code and explanations of the compiler's code generation strategies (most interesting), module specifications for all the Oberon-2 modules (more extensive in the German), and module specifications for interfaces to the Amiga's operating system (only in the English manual). Another difference between these two manuals is that the garbage collector description (introduced in the current compiler release) and associated package interface changes are only described in the German manual.

Both manuals are well-written and describe the essentials in an efficient and sometimes sparse manner. The English manual contains some translation errors but these are minor. What is more

urgently needed is an English translation of the most recent German manual. Until the distributors, A+L AG, do so, their North American sales may suffer.

Ordering

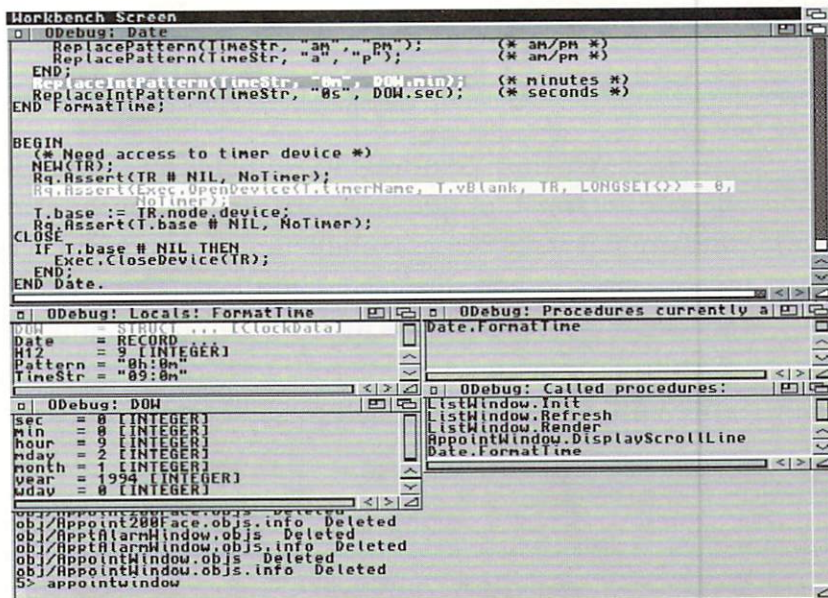
Although both Swiss and German distributors exist for the Oberon-2 compiler, there are no North American distributors. I ordered my compiler through mail order and fortunately have not needed to contact A+L AG for support. When ordering the compiler (270 SFr.) and debugger (180 SFr.), their English-speaking salesperson was friendly and answered all my questions. A sore point with the ordering process was that they require documented evidence of your order and won't accept major credit cards. Thus, you either have to FAX them an order form and transfer funds to their bank account or mail in the order form along with an international money order in Swiss Francs.

Summary

The Amiga Oberon-2 optimizing compiler is a robust tool which implements the latest object-oriented technology in a language which is easy to learn and produces small, efficient object code. The linker is one of the best and its unused code removal results in extremely small executables. The supplied editor's integrated environment is on par with the best in the industry and has a full compliment of ARexx commands. The full-screen, symbolic, runtime debugger has more than paid for itself in the time saved in hunting down bugs in record time. Although no up-to-date English documentation is available, for most applications you'll never have to use the manual. If you can live with the German-language interface, this is one of the best integrated compiler systems available for the Amiga.

•AC•

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Take2

R. Shamms Mortier

As if you didn't know, the Amiga is a premier tool for artists and animators. By far the most unique software written for the Amiga is also written by artists and animators, often as a challenge to create the very tools they can't find anywhere else. Such is the case with the product which we will look at in this article. It is an animator's tool written by an animator (Geert Vergauwe of Rombo Productions) over a four year process, an animator who had no experience with programming before tackling this software.

What it is, What it does

Take2 is a special kind of Edit Decision List Processor (EDLP). An EDLP is a piece of software that allows you to reconfigure and manipulate frames in order to create a desired animation. In addition, it acts as an animator's "Pencil Tester", and also has the capability to target sound samples to specific frames in animation. It can also play back the results of its manipulations, but only in non-AGA modes can this be done while you are recording the results. So, in a sense, Take2 was created to be a kind of super EDLP.

Take2 and Graphics

All of the graphics that Take2 addresses have to be created outside of the program itself, in a paint program like Brilliance or DPaint (no 24-bit art is allowed). I used several animations created in DPaint to run some tests with Take2. The best thing about Take2 is that you can composite layers (up to four) of art and animations. There are four main tracks that can be filled with selected single or multiple frames. The back ground color of each can be addressed as transparent, so that elements of succeeding art or animations shine through. Each of the layers has to be in the same resolution, as well as having the same palette and number of colors. Whatever non-24-bit resolutions your system addresses will work. A list of all of the frames (by number) is written to one of the selected four columns in what Take2 calls an "exposure sheet".

Once loaded in, the whole business can be played back at 25 (PAL) or 30 (NTSC) frames a second (or at least as close to this as is possible with your system) with the help of a "Flipper" module. The playback is in grayscale. When all of the tracks are "merged" (combined into one layer) and the result saved, the original resolution is addressed for playback in a dedicated Amiga player. A special feature called a "Frameboard" allows you to see each frame as a small stamp, and to range back and forth through all of the frames. This is one of Take2's nicest features.

Take2 is also meant to work in conjunction with the VIDI-Amiga digitizer, as controls for this unit are built in. You can digitize frames from any source, however, and after saving them load them into Take2 for animation processing. Frames listed on the Exposure Sheet can be thoroughly edited at any time before or after merging (cut, copy, paste, add). One useful aspect of the exposure sheet is to allow you to multiply any single frame in an animation, so that you can freeze the playback at any desired spot.

Take2 and Sound

What would an animation be without sound? Take2 gives you the ability to target any 8svx sample you have to the frame of your choosing, so that your character can sneeze and cough as desired,

exactly coincident with the visuals related to the sound. Samples are loaded into the "Sample Panel", and as many as memory allows can be selected from the load path. Then a special button can be pressed to play a selected sample for preview, and any one of four tracks can be selected to store the sample for playback to a specific frame position in the animation. Selected samples can be removed from both a soundtrack and/or from memory.

Take2 and Animation

Take2 allows you to load either animations or non-24-bit ILBM single frames into any one of its four layers, and then to design a unique animation from the way you manipulate these frames. When an animation is loaded in, Take2 breaks it into single frames and stores the whole business in memory, so users with small amounts of memory need not apply for large animation tasks here. Even with 16MB, I ran out of memory on several occasions trying to develop large four layer animations. Users that work in Lo-res non-overscan (which I have no interest in) should have better luck. After cutting and pasting cels and layers to your taste, the finished animation can be saved out in three ways: as a compressed animation that can be played back with any IFF player, as an "XSheet" file (saving only the data paths that can be loaded into Take2 in another session), or as a "Scene File" (which Take2's animation stand-alone player can read and play). The advantage of using Take2's player is that sound files will play as indicated, but the AGA frames have the flashies. The advantage of saving the animation out as a standard ANIM file is that it can be played from any standard player (like DPaint), but then you can't have the attached sounds.

What Take2 is not

Do not try to use Take2 as an ANIM viewer, especially in AGA modes, as the results will be very disappointing. AGA flicker is all present, whether in 256 colors or in HAM8. This means that you cannot tape the results of your scripting to a VCR from the software. After saving out a Take2 animation, view the results in DPaint or another viewing option. This is a very frustrating state, since Take2 scenes offer you the capability to view and hear animations that have been designed in the software, but watching a flashing AGA animation is not very pleasant. The other option, trying to save a merged animation, can also present you with "out of memory" flags very quickly, especially when the frames are in Hi-res and overscan. One way or the other, a better situation has to be found.

With the "Scene Player" module accessed, I attempted to use it to play a previously saved scene. However, all I was able to view was a strange 16 color transformation of my overscan 256 color

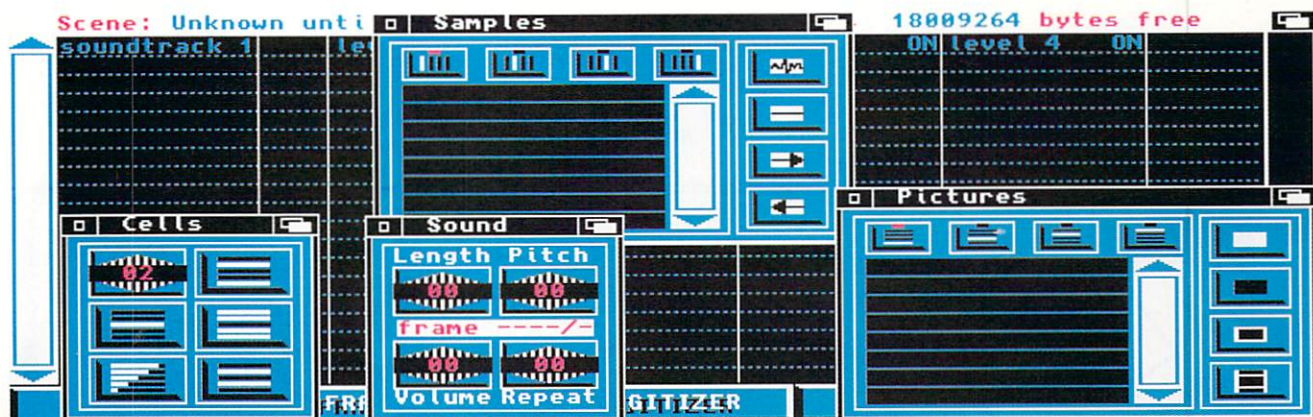


Figure 1. Here is a view of the Take2 Exposure Sheet and the four associated menus.

animation. You must, by the way, remember to develop animations and pictures in resolution multiples of 64 for Take2. A horizontal resolution of 704 will work fine. I was also able to track down another irritating bug in DPaint by using this rule. DPaint has its own law, which is that it will not allow you to input a custom horizontal resolution of 768 (64 higher than 704). 704 wide animations will run fine in DPaint, whereas some other sizes cause DPaint to crash and burn, just like non-64 wide frames cause Take2's Scene player to choke. Why is the animation world sometimes so complicated?

What Take2 Needs

It would be nice if the viewing capacities of Take2 did allow you smooth access without AGA and HAM flicker. That way, you could tape directly from the program. I would also like to see a realtime reversal mechanism, allowing you to reverse ANIMs on the spot (of course, looping and ping-ponging would be required as well). I also think that the identifying graphics that are associated with editing buttons are far too arcane and non-standard. Why not use a big "X" for removing frames or cels, as an example, instead of a meaningless box? It's better to have text identifiers on buttons than graphics that are only used in one program. Take2 has severe problems in memory allocation and management. I ran it on an A-4000 with 16MB of RAM and 2MB of Chip RAM. I couldn't merge more than an 8 frame animation (256 color overscan). The secret that I learned is to make sure you continuously flush out the system before going on to merge frames. Remember, Take2 turns all frames in an ANIM into single frames and stores them in memory, eating up all available RAM very quickly. If you work in non-AGA modes,

Take2 is kinder. But who wants to do professional work in either a limited palette or resolution any more? Surely a better and more efficient compositing and storage operation for AGA modes can be implemented without making excessive calls on RAM.

On the Positive Side

Take2 has a lot going for it. The way that it targets sound to frames, the ways it allows you to take different animations and composite them in alternate layers, and the general principles that it offers the Amiga animator as far as constructing composite animations easily from series of separate pieces. I think that given the possibility that work on this software will continue, and that these suggested revisions might be taken seriously by the developer (as well as other suggestions for improvement from other user sources), the next major version of the software should be far superior to this one. If you are a beginning animator then you might find Take2 a worthwhile investment as far as learning various editing processes and terminology is concerned. As for me, I will be waiting along with many of the rest of you, and promise to take a second look at a Take2 upgrade in the (hopeful) near future.

•AC•

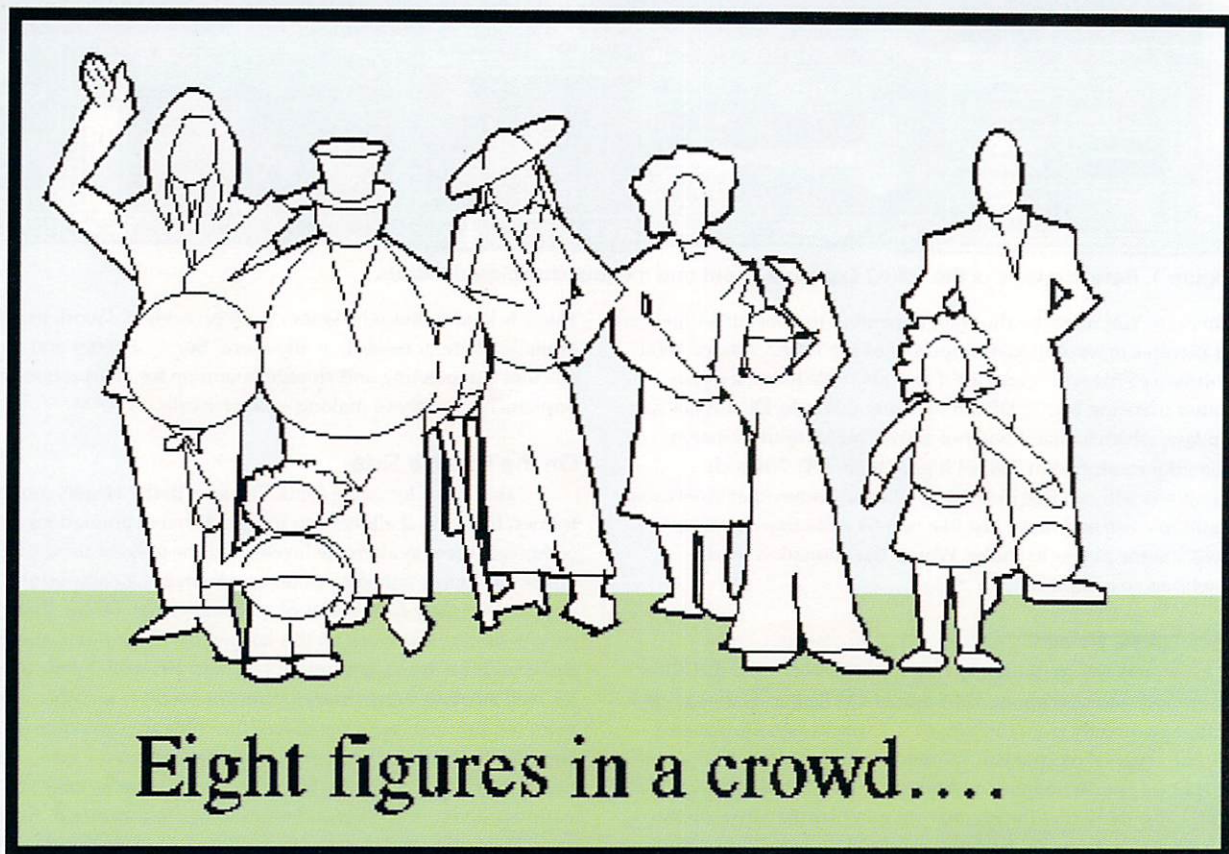
Take2
MSLP: \$99.95
Rombo Productions
Baird road, Kirkton Campus Livingston
West Lothian EH54 7AZ England
Inquiry #243



Figure 2. The special Take2 "Flipper" module has a standard VCR interface, allowing you to view your animations as you redesign them.

A 2D Animation Project

by R. Shamms Mortier



When you operate a computer graphics and animation business, the pressure to meet unreasonable deadlines is the same today as it has always been in the field of graphics. There never seems to be enough time from the initiation of a task to its expected conclusion and delivery. It is this anxiety laden pressure that makes you aware very quickly about the value of your tools, especially if you are working with computers.

Poor hardware and software shows its true colors very fast under the pressures of a deadline. That package you bought because of some advertised hype might be the same one that fails the test of reality when the job has to be delivered the next day. Unintuitive software, whether poorly documented or suffering an interface that only a nuclear engineer can decipher, is filed away after a negative experience under the pressure of a job that must be done in a short time, never to be seen again. What you think a package can do and how valuable it is under fire narrows your realizations concerning the choices and purchases you will make in the future.

I own hundreds of Amiga programs, and among those are every graphics and animation package ever produced for our beloved system. Before I had a selection of this software ported to my hard disks however, there was a telltale way to discern which ones were the most valuable. This was by gauging the "smudge factor". The deeper and grittier the thumb smudge on the disk label, sometimes wearing away the label itself in spots, the more vital the program was in my work. Constant removal to and from the drive deposited this badge of value no matter how clean my thumb was. Over the years, the package with the most smudges on the floppy has been Electronic Arts' DPaint. Proof of the digital pudding.

What you think a package can do and how valuable it is under fire narrows your realizations concerning the choices and purchases you will make in the future.

The Chittenden County Transportation Authority

The Chittenden County Transportation Authority operates the buses in Burlington, Vermont (Burlington is in Chittenden County). Their marketing director and publicist was asked to do a weekly TV show on transportation issues for a regional cable station. The Amiga has a long and honored history already with the cable channel as a text and graphics workstation, and it was known that I also had a long and obsessive reputation as an Amiga graphics and animation producer via my Amiga-enhanced studio. Two weeks before I was to embark on a musical tour of Russia, the marketing director came to me with the need to have a finished animation in hand that would be used as an opening for the show. She needed finished product on tape before I left. As with most creative projects that come my way, I was openly excited and internally a bit anxious.

In the best of cases, the commercial work that a videographics artist is asked to do may combine the joy of creative freedom with the elation that comes from getting paid for the efforts involved. This is not often true, so that when it's possible, the artist usually jumps at the chance. This was such a case.

I always tell my graphics students that "Creative Listening" is the first skill that a graphics professional learns to sharpen. Listen carefully to every nuance of your client's description of a project, and storyboard ideas will appear from the void. In our conversations, the title of the show, "In Transit", kept coming up as a focus for the visual work. In a flash, the outlines of a rough storyboard came to mind. I visualized a group of people waiting as if at a bus stop.

(continued on page 29)

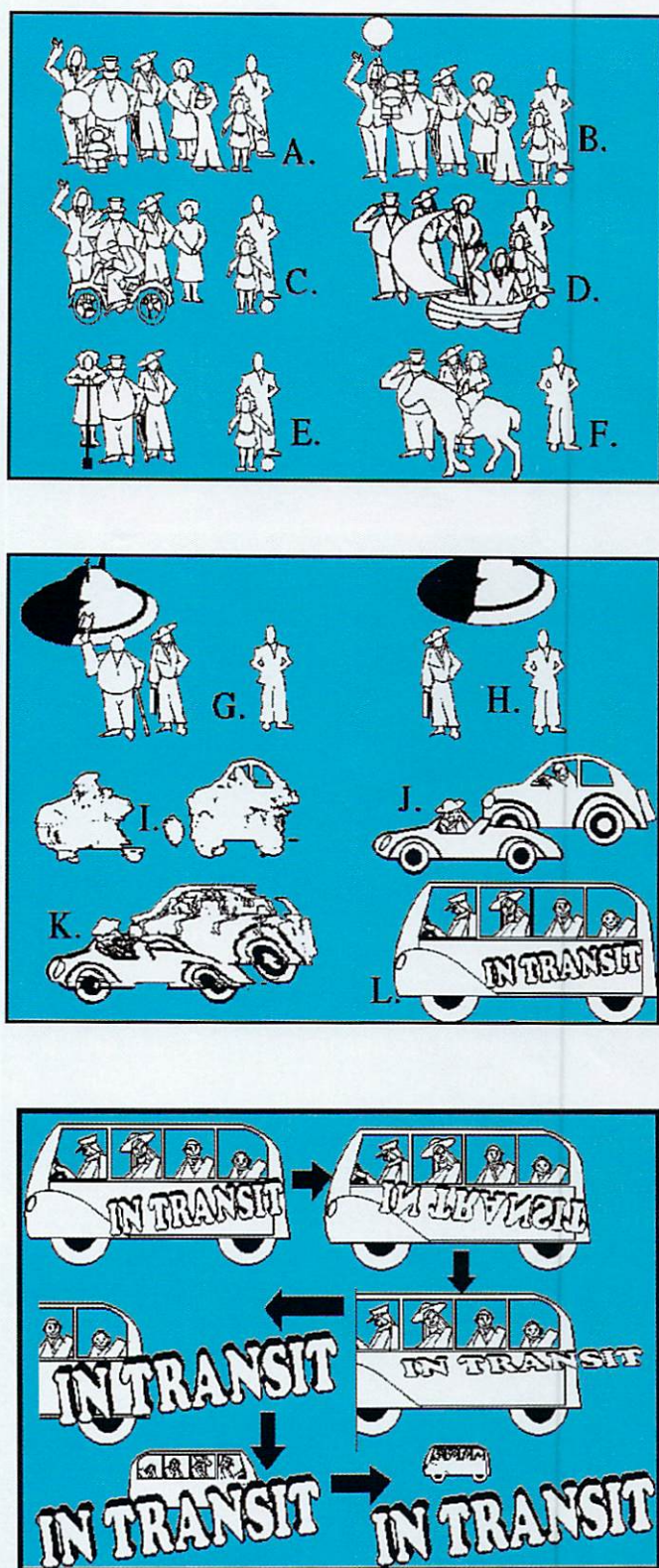


Figure 1 (Page 24). The original "crowd" scene that opens the animation. Figure 2 (Top). In A to F, you can see how six of the individual individuals move off the screen.

Figure 3 (Middle). G and H call attention to the Flying Saucer departure, while I to L show the use of DPaint morphs as transitions.

Figure 4 (Bottom). Here we can see how the "In Transit" title is animated and used.



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Studio 16 3.0 and the AD516 Board from Sunrize Industries

By R. Shamms Mortier

Simplicity...that's what's important at this stage of the game. Give me something that works according to some measure of standards that I'm used to on the computer screen. No arcane icons or bewildering instructions, and you've got a solid convert and a probable purchaser of your wares. The first tipoff that a program is headed in the right direction as far as clarity of operation and even depth of use is interface design. Does it look like an easy to understand list of options in its menus? Does its design fit into the enhanced 3D WorkBench look of 2.x and above? Can I get somewhere through common sense without even cracking the manual? These are the things I require at this point from software, no matter what the platform or the use.

Studio 16's Immediate Impressions

Great interface design and clarity were the first things that I noticed when I ran the 3.0 version of this software. It was obvious that there were features and options to be studied, yet I was able to do quite a lot without reading anything but the "how to install" section of the new manual. I was immediately seduced to explore further. Installation of both the hardware and software, by the way, was a snap. The AD516 board pops easily into an open Amiga slot (Zorro II or III), and the software installation process (I always choose the "expert user" option) was a greased reality as well. Just so you know, I tested this product out on an Amiga 2000 with 4MB of RAM and a standard 68000 processor. That's the only place in my four-Amiga network that I had an open slot, and the Amiga that I used is reserved for music and sound production. Later on, just to compare things, I tested it on my Amiga 4000 (16MB of Fast RAM and a 68040) as well.

Playing and Editing Samples from Stored Libraries

The software is able to grab sound libraries across a local area network just fine in order to edit them. I use an InterWork's ENLAN-DFS LAN system with the ASDG ROVERNET boards. I tried to load and edit a 16-bit sample from the Toccata Samplitude software (the sample used as a default with the software), but couldn't really tweak it to play correctly. I called Sunrize, and was quickly routed to the tech department, where I was walked through the needed process. It turns out that instead of "Resampling" the sound, I needed merely to access the Sound Parameters section under "Options", and reset the rate. A word about the Toccata default music file by the way. It is a RAW data file, and a small clicking sound at the end of its playback on the AD516 reminds you of that. The click is the file header info being read. RAW files have to be translated into Studio2.0 format before they can be parameter edited. The file header click has to be cut out in order for the sample to be looped correctly without the constant click.

Rolling your own: Recording Tracks

Recording data to RAM as a read-write musical interlude is OK as long as you have lots of RAM and your sequence is short. A typical ten second sequence can take a couple of megs, however, so

RAM is good as far as testing some parameters, but not as a nonlinear solution for the final piece. For that you'll need a hard drive with a lot of memory (I'd recommend a 500MB drive dedicated to the use of Studio 16 samples alone, and at least 16 megs of fast RAM in addition). Make sure it's a good drive, too, as there will be excessive reading and writing, as well as erasing. Your drive and controller should be the sturdiest you can get for a Studio 16 system, and fast, too. I think the best situation might be an Amiga 3000 or 3000 Tower, because of its fast built-in SCSI capabilities.

The first step in the recording process is to tell Studio 16 where the data will be stored, an easy enough task (just make sure there's lots of room on the partition or drawer you pick. Next, you would turn on the "Monitor" in the Recorder (see Figure 1, bottom left section). Then you name the data-to-be in the same requester, and hit "Record". Your hard disk begins to whirr away, waiting for data, and stops when you tell it to. An on-screen display tells you how much space remains on the drive selected for storage. You can connect either a mixer enhanced device (microphone or acoustic instrument) to the mono or stereo inputs on the back of the AD516,

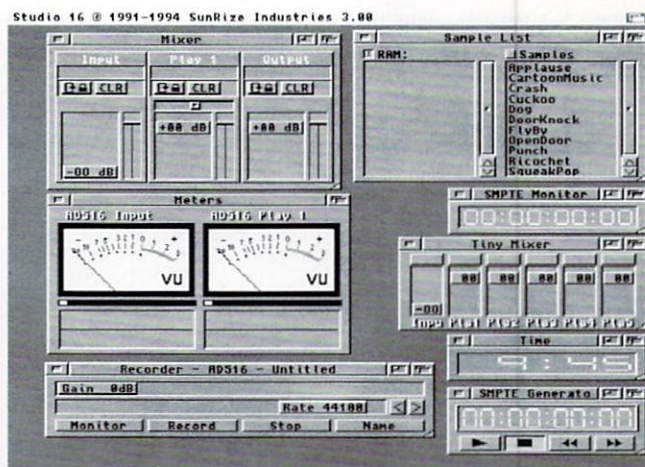


Figure 1. The Studio 16 Recorder is at the bottom left, surrounded by a selection of other requesters.

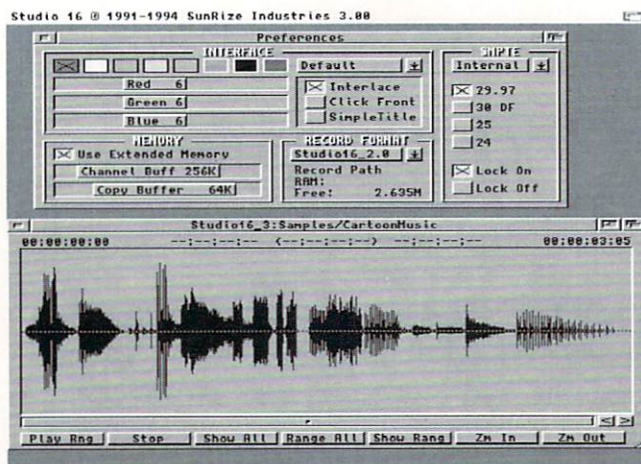


Figure 2. It's easy to design the Studio 16 screen to your liking. Editing samples is made visual with the Studio 16 graphic editing interface.

or you can connect a stand alone device (like a synth with a line out). I connected a Casio SK-5 sampling keyboard for these tests, and the results knocked my boots off—socks included. With a little tweaking of the volume and sampling levels, I was able to record the exact sonority of what the instrument produced. Next, I tried a microphone through a mixer as well as a wooden flute—awesome playback of every breath! Just think about the possibilities, acoustic instruments and vocals mixed with synthesized tracks.

The last step is that of taking separate tracks and mixing them together for a finished playback and recording the results to any desired medium. By the way, the AD516 and Studio 16 reads/writes SMPTE time code, so using a deck like mine (the Sanyo GVR S950) is made all the easier. Studio 16 track editing is the more complicated of the Studio 16 processes, but with a little study of the manual, it can be achieved with professional results.

Anomalies

While exploring the capability of the AD516/A2000 environment with this software/hardware, I was able to crash the system a good many times. Though it didn't happen the same way twice, it could have been a low memory situation (it never crashed on my A4000). It happened once when I had added eight separate sound file paths to test various samples, and occurred most frequently when I was recording to RAM. This may have been too much for

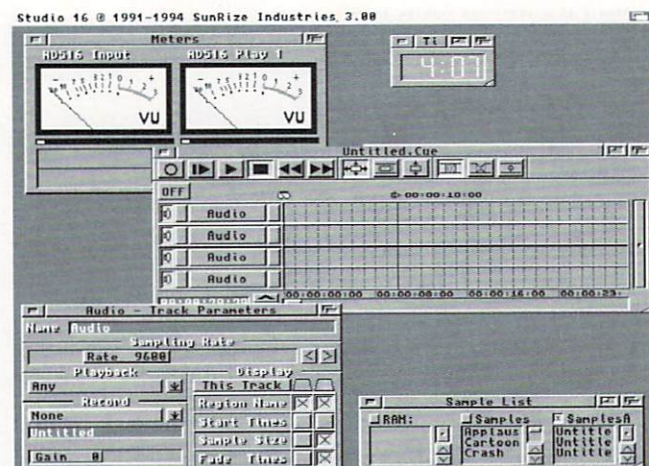


Figure 3. This represents what a typical screen might look like during a Studio 16 edit-track session.

the software to bear, especially considering that I was working with only about 2.3 megs of RAM as a playfield after the software loaded in. It would be good, however, to have a kinder, gentler way of allowing the user to know that low memory is approaching.

Wishes

The "ReSample" process should have an escape key interrupt. The process can take a long time (a few minutes) and some way of escaping from it should be implemented just in case you change your mind. There should be some way of doing nondestructive editing when the samples are eight bit 8SVX format. Compared to the MacroSystems' Toccata board and the Samplitude software, the AD516 needs some more options in this area. I would also love to see a way of getting a picture in picture graphic display integrated into this system (perhaps in conjunction with the VLab or another genlock unit), that was retargetable according to the 24-bit cards a user might have. This would make insert editing much easier. The Studio 16 "Recorder" window needs some sort of advance countdown option that ticks off a user selectable amount of time (metronome) before recording begins.

Sunrize has obviously put in a lot of time and effort upgrading this package on a constant and consistent basis, and their efforts should be applauded.

Conclusions

The user is cautioned that this is an audio nonlinear editing package, and as such there are constant read/writes from and to the hard drive. Make sure you have a good drive, a good drive controller, and as much RAM as possible. Cooperation and handshaking with the Blue Ribbon SoundWorks One-Stop-Music-Shop on-board synth is superlative, especially through the Bars and Pipes Pro software. You can store your B&P tracks to disk for real-time playback and editing. There are two new (upgraded) B&P accessories included in the package: SunMTE (which converts the time code to make B&P and Studio 16 handshake more effectively) and SunSet (which allows B&P to open Studio 16 modules on the B&P screen).

Sunrize has obviously put in a lot of time and effort upgrading this package on a constant and consistent basis, and their efforts should be applauded. The Amiga is a great music platform, a point that gets little enough attention. But the Amiga's 8 bit sound engine is woefully inadequate in this 16bit sound age, and until the Amiga 5000 comes out (!) with 16 bit sound capacity, third party 16bit hardware/software will have to suffice. The fact that the Amiga can boast of having the development support of a package as high end intended as this should cause those with serious sound applications in mind to sit up and take notice.

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Suggested manufacturer's Retail Prices:

For the entire AD516 and Studio 16 3.0 software- \$1495.00
For upgrading the software to Studio 16 3.0 alone- \$249.00
For trading up to an AD516 package from the AD1012 (Studio 16 3.0 software included)- \$995.00

Sunrize Industries
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Campbell, CA 95008
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Inquiry #241

(continued from page 25)

One-by-one, each individual left the screen by different modes of locomotion. I explained the idea to the marketing director, and she agreed to its principle composition. Now it was time to do the work, and my immediate realization was that DPaint would allow me to do exactly what was on my mind.

The Project

Unless you are working with an AGA machine (which at that time I wasn't), you have got to plan Amiga animations with definitive resolutions and the limited quantity of colors in mind. Playback speed and recording (unless you're working with a single-frame recording system) are effected by both resolution and number of colors. I visualized this animation design as being necessarily limited in colors to achieve the look I wanted, so I chose a simple 8-color hi-res overscan as my electronic canvas.

I wanted the figures to be basic without too much detail, somewhat childlike and cartoony but clean. All of the figures were created with a one-pixel black outline, and filled with a medium gray. I designed each separately and saved each out as a brush. This allowed me to use each brush as the basis for an ANIMbrush later in the piece. I and all other Amiga animators

she's bouncing morph into a horse, which she then rides off. A woman catches a ride on a passing sailboat, while another woman uses a pogo stick to exit. A rather large elderly man is abducted out of the picture by a passing flying saucer. Allow me to pause here for a moment and explain some of the special ways that some of these actions were created.

DPaint has an excellent 2D morphing mode, so it was fairly easy to morph the girl's bouncing ball into a horse. My company, Eyeful Tower Communications, markets a series of disks of ANIMbrushes based upon the famous Muybridge turn-of-the-century animation studies, one of which is a horse. I adapted this horse for the animal the girl rides off on. The lady that mounts and rides the pogo stick was created with a bit of humor. As the stick bounces, her head can be seen to leave her body at times as a response. The flying saucer was designed in 3D with the help of ADSPEC Programming's Aladdin-4D software. It was created in Hi-Res 8 color shading, and when ported to the DPaint palette, each of the dithered colors was replaced by the colors in the palette of the animation, giving it a surreal metallic sheen as it wobbles. This multi-colored element was a nice contrast to the otherwise fairly monotone look used in the first two-thirds of the piece.

Now for the last two actors. First, each was morphed into a person riding in a car with an angry countenance. The cars were

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will appear from the void.

that I know will always be in debt to Electronic Arts for initiating the concept of ANIMbrushes in the DPaint software. ANIMbrushes allow you to design and save massive libraries of animated figures, choreographed 2D actors that can be placed on the stage at any time. This makes animators joyous, because these actors are always "on call" for other animations. The eight characters I designed for this animation formed a perfect mixed group for the project, male and female of all ages and dress styles. Mixed racial characteristics were not an issue since facial features and skin color were not apparent.

I actually took the basic figures and designed two ANIMbrushes for each. The first ANIMbrush was used to make them jostle around a bit while grouped together, and the second was used to put them "In Transit", that is, modes of transportation for leaving the scene. The modes of transport were very different for each of the first six (I'll discuss the last two in a bit). A little baby floats off the screen while clinging to a balloon. A young boy rides off on a red bike. A young girl has the ball

then set against each other in a competitive little scenario. From there, both cars morphed together into a CCTA bus, complete with smiling passengers. The reason for this is that one of the themes of the show is to demonstrate that public transportation can help to alleviate the stress levels experienced by automobile drivers. On the side of the bus is a sign that reads "In Transit", the name of the program. The sign spins off of the bus and gets larger, while the bus leaves the screen in a three pass path, getting smaller as it moves into the distance. Only the title remains at the end. Oh, yes. I forgot to tell you. The payment for this animation bought my Winter wood supply for 1994. Enjoy! See you in ROMulan space...

•AC•

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Fall River, MA 02722-2140

Aladdin-4D: Tutorial #9

By R. Shamms Mortier

The "big boys", those computer platforms that are ten times the cost and speed of the Amiga, offer their users an array of tools that we seldom associate with desktop computing. After all, they have access to the quantities of memory and processing speed that few desktop artists and animators can dream about. But creativity is a funny thing. It seems to find a way through the smallest doorway, and to turn the tables on the expected.

That is the quality of the creative programming initiated for the Aladdin-4D software from ADSPEC Programming, and especially by the head man himself...Greg Gorby. Every time a new update of Aladdin-4D hits the shelves, it contains more "impossible" tools. Such was certainly the case when 3.0 was released. One of the newest features of A4D 3.0 is the introduction of a "big boys" type of cloning tool, known by the name of "Instancing".

Instancing is like cloning with an attitude. In cloning an object, we expect to see its twin on the screen, so we can move the duplicate object anywhere in space and tell it to do something entirely different than its parent. When we instance an object, that object must first be assigned to a path, because it is in the Path requester that the command structure for instancing resides. With instancing, we become involved in the cloning of object ghosts, and the ghosts are wed to the same path as the parent object, so whatever the path tells the initial object to do is also an instruction for all of the initial object's instanced ghosts. There is more to it than that, however, since each of the ghosts can be related to the initial object by differing incremental spaces and times. In this way, an initial object can seem to give birth to its instanced ghosts over time, and they can literally grow out of the parent object (and also disappear back into it again as well).

The Instancing Control menu

Take a careful look at Figure 2, because the tremendous power of magic instancing is controlled by these seemingly simple input areas. Let's walk through this menu and describe what these commands do. The first area you see at the top says "Number". This is where you tell the computer how many copies of the object it should make. Under that is an area called "Offset Time" with Entry and Exit input areas. We'll get to that in a moment. Next, we'll pay attention to the XYZ Entry/Exit areas named "Offset". These are very important, for they tell the rendering engine how far apart and in what relative plane the newly cloned (instanced) objects are to be from each other. Setting Entry numbers at zero and Exits at some number of distance units (say 20,000) will mean that all objects will start in the same coincident space as the parent object and then emerge out of it over time, in whatever direction you have indicated (X,Y,Z). If you're sitting next to your Amiga with Aladdin 4D 3.x running, just play with these options for awhile to get the hang of what's happening. Then let's investigate the other input areas in this menu.

Below the XYZ spatial unit areas there are XYZ Entry/Exit inputs for "Rotation". You can probably guess that these cause the instanced objects to rotate in whatever plane is indicated, and that

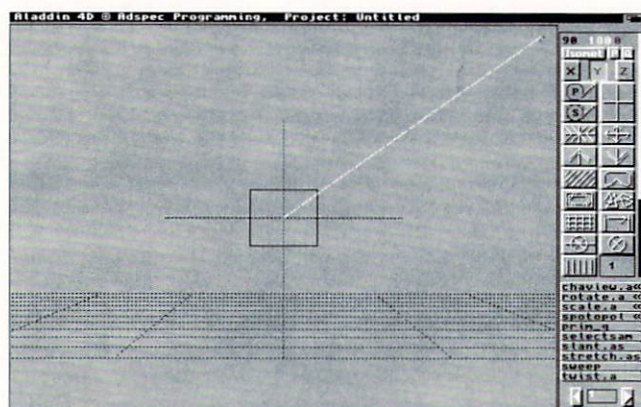


Figure 1. Here we see a simple linear path and a rectangle that has been assigned to move by following it. Normally, we would expect to see the rectangle moving up and down along the path, but that's before we apply the magic of instancing in Aladdin-4D.

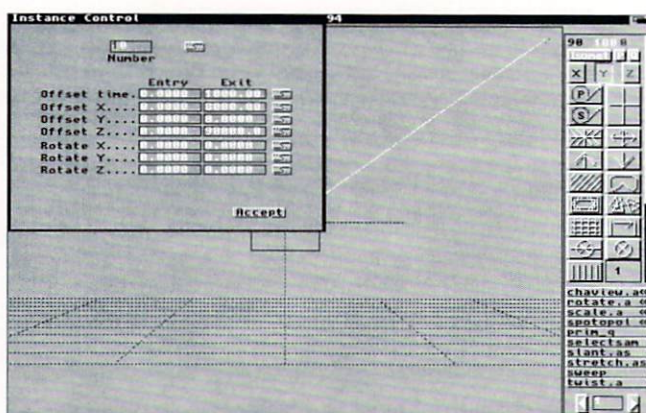


Figure 2. The Instance Control menu is accessed from the Path Control requester, and remains selected after you have configured it to your liking. Here we have set the "number" of items to 10, the "Offset Time" to 1000, and the Offset X and Z to 8000 and 9000 respectively. To see what the resulting animation looks like, see Figure 3. (Entry rotation of the box around the X plane has been set to 360 degrees).

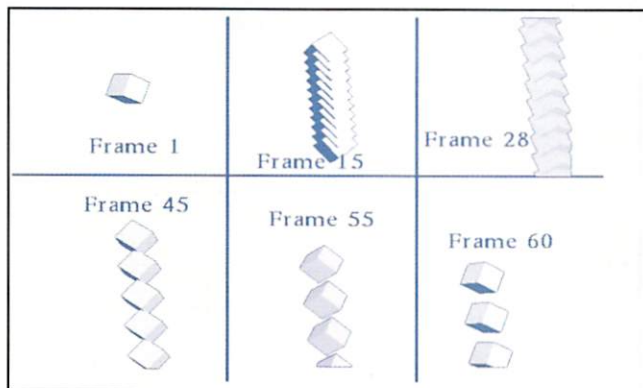


Figure 3. With the settings indicated in Figure 2, the simple rectangle now becomes an animated collection of rectangular shapes.

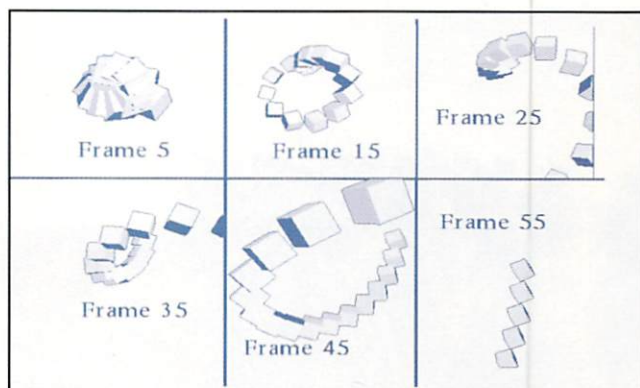


Figure 4. Just by changing the settings in the Instancing menu, the same rectangle now takes on a different animated personality. (Rotation of 360 around the X and Z, and Instancing settings as follows: Offset Time Exit=10000, Offset Z Exit=150000, Rotate X & Y on Entry=360).

different Entry values from Exit values will cause the instanced objects to rotate in those planes accordingly. Experiment with these settings and watch the results. Now let's return to the "Offset Time" indicators for Entry and Exit values. The numbers entered here divide up the time that action is applied to the number of instanced objects involved. A number of "4" as an example will cause 4 objects to start their movements 25% different from one another. The numbers get a bit more complex as the relationship between the Offset Time and Number of instanced objects gets larger, but the important thing is getting a feel for what's happening through experimentation, and keeping a journal of the results in language you understand.

CSpline variations

You will notice that there is a small CSpline (Control Spline) indicator at the right side of the "Number" area in the Instancing Control menu. Aladdin 4D has CSpline toggles almost everywhere.

A CSpline is a line, straight or curved, that allows you to control the way actions take place over time. You can make objects speed up or slow down by manipulating the CSplines attached to their actions. The CSpline in the Instancing Control area is used to alter the time that instancing actions take place. You bring up CSplines, and the ability to load and save them, by activating this toggle.

Instancing and Memory

The results of instancing can only be seen when you preview an animation (F9 key). Otherwise, your editing screen will only show Paths and singular parent objects. There is a great time and storage saving because of this. You can save out a project at very little disk space expense, because the complications involved in instanced objects are saved as directions, not as polygons. However, there is a price. Rendering time is not saved. When rendering, the computer has to render each separate instanced object as a whole, so that twenty instanced objects are twenty objects to be



Figure 5. This single Napoleonic Warrior was sculpted in Aladdin-4D.



Figure 6. Here, merely by instanting the animated figure on a planar surface, the single warrior becomes a whole army.

rendered, complete with whatever textures and surface properties are involved. Rendering can take a long time, and unaccelerated Amigas should not be used. However, I have discovered a gentler kinder way...

Eureka!

Aladdin 4D has the capacity to allow you to use animated single frames as textures, an application that has many uses. You can also texture map animated single frames to a transparent plane, so that animations may be placed in different areas of 3D space so that other animations can be seen "in back of" and "in front of"

The magic FOUNTAIN

"Fountain" is the name of A4D's new particle animation system. It is the most extensive and full-featured of any particle animation system in use today, except perhaps on the very very expensive high-end machines. Particle animation allows you to create animated organic effects like flowing water and gases, and because A4D's fountain utilizes texture mapping as well (including animated texture maps), the effects possible are limitless and potentially bounded only by the creative instincts of each user.

The FOUNTAIN Requester

We will cover the methods of creating A4D particle animations in a tutorial fashion in the one of the next Amazing A4D tutorials. For now, just take a look at the extensiveness of the Fountain requester in Figure 7. Look intimidating? Don't worry, once you get a grasp on the basic features, you'll be able to generate astounding results, and the basics are what our A4D tutorial on Fountain objects will be all about...as well as some interesting experiments that will take you deeper into the Fountain realm. Nothing resembling the usefulness and depth of A4D's particle system is found on any other platform or in any other Amiga software. With it, and some of your favorite texture maps, you can create believable other world organic effects.

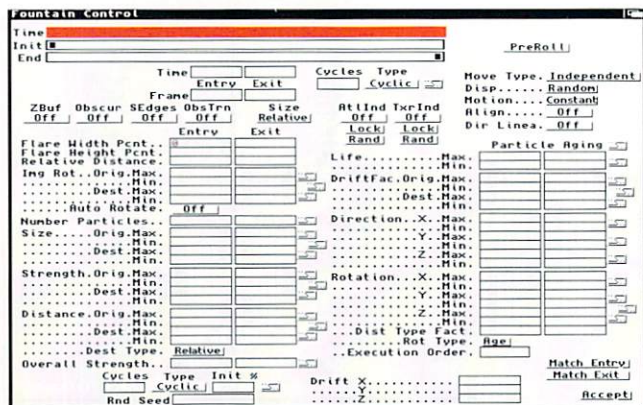


Figure 7. Just take a look at the extensiveness of the Fountain requester.

them. This has great meaning when doing instancing animations that involve dozens or even hundreds of objects on screen. To render all of these 3D objects by using the instancing method alone would require lots and lots of rendering time and lots and lots of RAM. My discovery can be explained in two steps.

First, animate a single object the way you want it to move. Save out the animation as single frames (not as an ANIM5). Then set up a planar surface in the edit screen. Use instancing to get the surfaces to move as you want your 3D objects to move by using the Instancing Control menu. Now (and here's the magic!), map the animation frames to the plane that you instanced, and set the plane to transparent (reference the A4D manual to learn how to do this). What's the result? Figure 5 shows a single soldier that I constructed and animated in a marching position (marching in place). Figure 6 shows the same soldier as a whole army. Rendering time was very fast, because only textured planar surfaces were being rendered, not entire 3D objects. Flocks of birds, armies of cavalry, and many other groupings could take advantage of the same process.

Limitations of my method

As long as the planes that are animation texture mapped move in a linear fashion, there is no problem. When they turn in 3D space, however, their "depth" will become abbreviated. Unless you want this effect (and you may), the mapped planes have to stay parallel to the camera's point of view. If you want 3D objects to move on convoluted 3D paths, then full instancing is probably the way to go.

Stay tuned. There are lots more Aladdin-4D tutorials coming...especially since version 3.2 has just hit the streets. ENJOY! See you in ROMulan space.

Aladdin-4D is a product of ADSPEC Programming 1405 North Ellsworth Salem, Ohio 44460 (216) 337-1329

•AC•

Please Write to:
R. Shamms Mortier
c/o Amazing Computing
P.O. Box 2140
Fall River, MA 02722-2140

Panorama 3.0

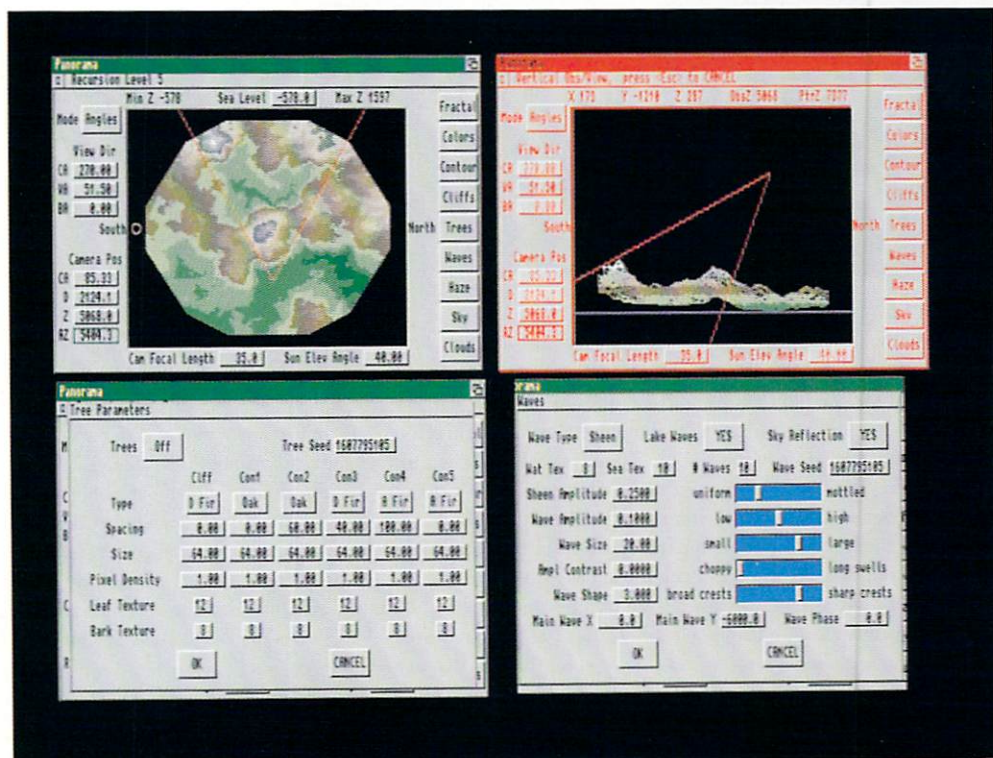
reviewed by R. Shamms Mortier

As far as fractal scene generators and animators go, I was of the opinion for a long time that the two that have addressed the Amiga for quite a while now (Scenery Animator from Natural Graphics and Vista-Pro from Virtual Reality Labs, Inc.) were quite enough for anyone needing to produce excellent scenic output for fun and/or profit. My thought was that each of these two excellent packages had addressed most, if not all, of the necessary variables that any Amiga artist/ animator would ever require. I was hoping, in a way, that AmiGadget's Panorama software would be just another clone of one of the two other packages, making my job as a writer less complicated, and leaving my scenic work as an Amiga artist in previous comfortable software environments. I was wrong.

I should never forget that the Amiga developers are a clever collection of individuals, a club with optimum open architecture, meaning that there is always room for new approaches. It is this very vibrancy and competition that assures all of us that no single piece of hardware or software is going to have the absolute "last word", no matter how much the PR of any vendor stresses the point. It also means that dedicated Amiga programmers are going

to be continuously challenged to push their wares into realms considered impossible in the present, far past the boundaries that were considered as "final" edges. All of this happens because some individual sees a product and says "I can do that better" or "I can do that differently". Each time this happens, the Amiga product consumer benefits. In the case of Panorama 3.0, the Amiga artist and animator are treated to a whole bucket of new alternatives in the realm of Amiga scenery generators and animation engines.

Figure 1. Top L&R: The Panorama Main Interface and the Side View placement. Bottom L&R: The Trees Requester and Wave parameters selector.



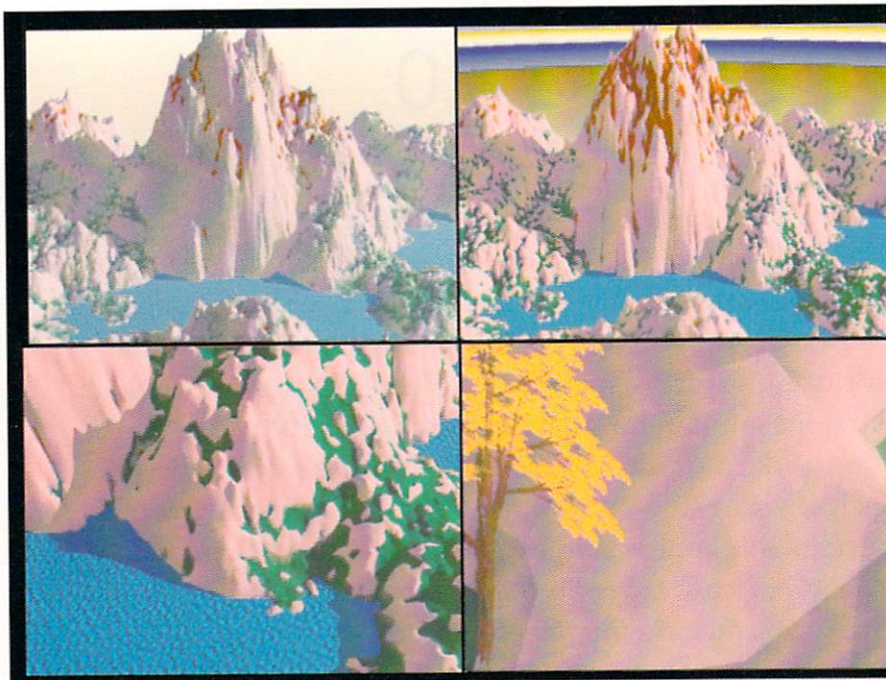


Figure 2. Top L&R: By changing the colors and shadows, any scene can take on new properties. Bottom L&R: Closeups reveal more detail, and Panorama's trees look like small zen paintings.

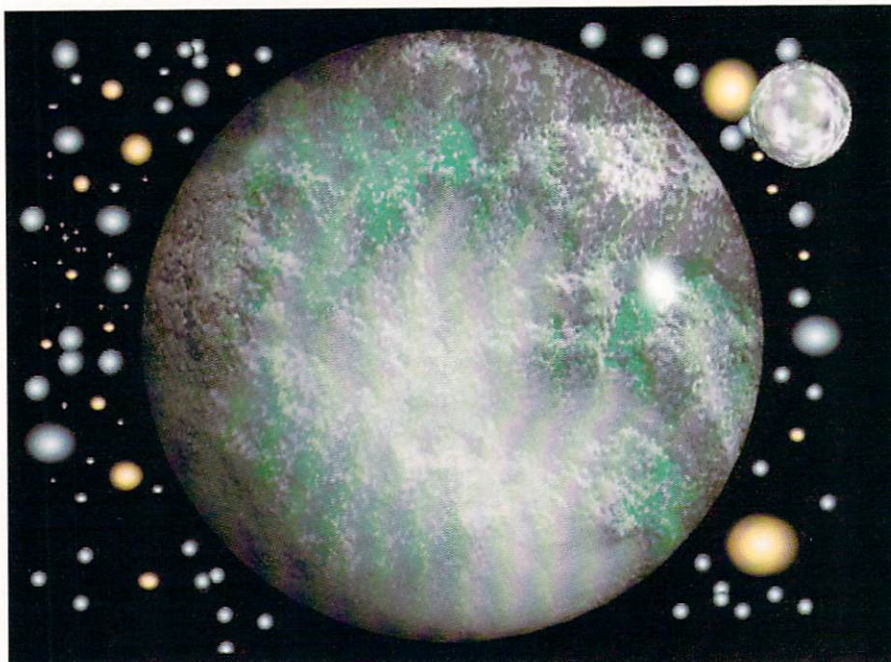


Figure 3. By taking a Panorama view from a 90 degree angle high above the scene, you can render a view that can later be spherically mapped on a revolving planet (this painting was accomplished with Aladdin-4D and OpalVision in addition to Panorama).

Different Strokes

The other two Amiga fractal scenery programs are much closer to each other as far as interfaces and general operations go than they are related to Panorama. The differences begin with Panorama's main interface, and the way one accesses parameter options in a scene prior to rendering. There is more emphasis upon user defined variables and upon graphic manipulation of created scene boundaries. Let's look at some "for instances".

Panorama gives the user something we didn't even think of asking for, but once exposed to is identified as an absolute need — color wireframe previews. Each of the competitor's packages supply us with preview renders, but Panorama's super-fast wire frame preview (colored as to scene component, like water, cliff, snow, etc.) gives a better feel for what the actual finished render will look like.

As one who espouses that all Amiga visual designware should give over maximum variable control to the user, as opposed to keeping choices locked up in a few menu options, Panorama comes closer to this wish than its competition. The more user choices the better as far as I'm concerned. Panorama offers more than the standard ability to change a few colors, for instance, by offering many more palette variables (of course, you only see the results of this in 24-bit). Another example can be found in the "Trees" requester. Here, you can choose from two different trees just as in the competition (a deciduous and a conifer), but there are placement variables that can be set so that all six are of any mix of the two types (e.g., six conifers or three of each...). The color of any of these six can be altered to your heart's desire. Want a Fall scene? Just make all of the trees Oaks and vary the coloration from yellows to reds. Not only that, but you can alter leaf and bark textures, pixel

density, size, and spacing as well.

The cliff slope angle (five separate settings) and curvature bias can be altered. Cliff edges can be fuzzy, diffuse or sharp. The texture of the cliff can also be changed. Contouring and shadow dither can be altered as well. The six cliff contour settings have separate tree groupings assigned, and the parameters of each group can be separately edited. The water in a lake or ocean can have realistic waves set as to amplitude, frequency, shape, phase, spacing height and more. The water can have any color you desire, and there is even a tutorial for creating lava lakes. Sky reflections can also be calculated and added. Attention: Wave phase value can be animated, making the water move!

Another unique Panorama option is the addition of ground haze to a picture (any elevation and transparency you desire). Attention again: Haze density and height can be animated, causing clouds of fog and haze to dissipate in the sun. The aesthetic impact of mist in a mountain valley cannot be underestimated.

Intuitive placement of the "camera" is facilitated by a two-view system, again unique to Panorama. The normal top view can be instantly toggled via a right-mouse click to a side view, and the camera moved in real time. I find this much easier than using numerical equivalents for camera position/angle settings, though these are available as well.

Renders

If you need to have Amiga render options like 256 color AGA or HAM8, much less, more esoteric options like DCTV, then Panorama is probably not for you. In Hi-Res, Panorama puts out a 16 color view, while Lo-Res ups the palette ante to the normal 32 (no matter if you run it on a 4000 or a suped-up 1000). These screens are pretty awful as far as color and clarity goes, but you may save them if you like. Panorama's finished renders are really targeted to IFF 24-bit files.

After a view is finished rendering, you can save it to the IFF resolution checked or (providing the 24-bit render option is toggled on) you can save it as a full 24-bit file and view it in a 24-bit paint program. I looked at the results of my efforts using OpalVision. I would hope that in the future Panorama becomes fully retargetable, and addresses all of the Amiga AGA modes as well as a good number of the most popular boards directly.

There is a function that allows you to transform a rendered frame into a standard HAM pic (with a nice antialiasing routine included), but this is no longer the way most Amiga artist/animators work. As far as the 24-bit renders, it would also help to have on-board JPEG saving options.

What about the renders themselves? How do they compare to the competition? The short answer is that they are far more variable, so that their actual appearance depends upon your familiarity with making the proper changes. What I have noticed is that the light seems to play much more realistically upon the rendered surfaces, especially when those surfaces are made to be sharp and the "sun" is positioned at angles that enhances certain shadows. Everything is geared to 24-bit display, so you cannot see many of the rendering details until you load the picture into a 24-bit viewer (a draw back).

Shadowing, however, extends convincingly over water areas as well as land, and (very important!) since the Sun's elevation angle and the "sun contrast" and "shadow contrast" can be varied from one keyframe to the next, the shadows in your animation can move convincingly over the terrain and water in the landscape!

Because rendering an animation and saving it means saving 24-bit frames, you are going to need a pretty fat hard drive to store

a lengthy animation. That should be redressed, allowing the user to save ANIM files in 256 color or HAM8, or better yet, saving ANIMs as DCTV components. Otherwise, you'll have to take all the 24-bit single frames and translate them using ADPro, ImageFX, ImageMaster, DPaint, or Brilliance. Other options would be to use an alternate viewer/organizer. This is not an efficient way to get storable ANIM files, unless you own and operate a single-frame recorder and the necessary hardware to address it.

As for extreme close-up renders, panorama needs more work on the blocky areas that are treeless and waterless. These areas need to be more suited to close-up viewing. Trees, on the other hand, look extremely well done, like miniature Japanese watercolors. I am sure some sort of fill algorithm could be used to give the blocky areas more discernible and variable texture.

Conclusions

There is a separate program in Panorama called "GeoRama", used to import and glue together DEM files. I wish Panorama (and its competitors as well) would stick to a common DEM format, so everyone's files would address all the programs (but there's lots of money to be made, I guess, in marketing proprietary formats). At first glance, it seems that rendering times in Panorama are severely longer than in other scene renderers, until you remember that 24-bit toggled on means that it is drawing to the screen and saving all of the 24-bit parameters to memory at the same time. If you are going to run the "F-10" demo and are dragging the program to your hard disk manually (instead of using the Install program), be sure and "Show All" icons first, as the test data and the F-10 data are hidden. The present Recursion (detailing) levels of 1-5 should be considered for expansion in the next upgrade if possible (either a higher recursion parameter or more variance within the present scheme). This program is a natural for retargetability in the future. The interface can use a visible 24-bit toggle button and a "Draw" button as well. The "sun" should be allowed movement interactively as well as through menu/numerical choices, and its direction should be more open to user control. One last request, how about adding the ability to morph between selected keyframes over a period of time?

I tested this program on an Amiga 4000 with 16MB RAM. The pictures were rendered in 24-bit, displayed to OpalVision via the ENLAN-DFS software and the ASDG Rover-Net board, and resaved in JPEG for later use. Like the other packages, the Panorama people sell their own DEM file disks of various locations, priced competitively with their peers. If you like and/or need to play with scene generator/animators for any reason, then add this to your list of possibilities.

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Video Transitions using ARexx

by Jason R. Hardy

Writing a script may seem like an imposing task at first,
but if it is broken down into a few concise sections
the task becomes much easier.

Art Department Professional is one of the most powerful tools for professional Amiga users. It is not a toy, yet can be enjoyable to use. ASDG included a large number of interesting effects, but no easy way to use most of them in an animation. FRED is great for simpler tasks, such as combining a large number of frames into an animation, however; when it comes to creating brand new animations, it can be difficult to achieve the desired results even with the included tutorials and scripts.

The best way to get all the power out of most of the operators is to write an ARexx script to control them or use one of the programs now available to help automate the writing process for you. After all, who would want to perform an operation manually on a 500-frame animation? But contrary to what a large number of people may think, writing and designing an ARexx script is easier than neurosurgery.

The purpose of this article is not to teach the ARexx basics, but rather to help someone who uses ADPro and would never consider using ARexx for anything. Writing a script may seem like an imposing task at first, but if it is broken down into a few concise sections the task becomes much easier.

To simplify the task, it is useful to divide the writing process into three areas: the idea, or what you want the script to accomplish; the theory, or which operators in combination can be used to give the desired effect; and the actual writing of the script.

Getting an idea can be the hardest of the three steps - after all, the effect being produced should be both effective and visually pleasing. One way to get inspired is to watch a T.V. channel which may have a fair number of visual effects, such as a home shopping channel or a home viewing movie advertisement channel.

Once you have an idea, you must decide how to go about implementing it. Unfortunately, there are few shortcuts; however, if you have even a vague impression of how to accomplish the effect, you should go into ADPro and try out a few scenarios to manually approximate your theories. This will help you decide what works, or at least what doesn't work. Often, it is quite helpful if you draw the effect on a piece of paper and then work from the drawing instead of from memory.

Finally, we have come to the implementation of the theory. If you have never used ARexx before, I would suggest that you look through the scripts which come with ADPro as they can provide a wealth of information about how to write your own.

However, back to the first step for a moment. In order to get an idea, one must be aware of the capabilities of the program. Therefore, a few examples of effects will be provided to help you get some ideas.

Compositing

ADPro not only provides operators to manipulate individual images, but also gives the user the ability to composite two images together. In all of the examples, compositing is the basis for the

transitions, and thus, we will start with the simplest transition - the fade. All that is involved here is changing the "fade factor" in each frame. To see how this is accomplished, take a look at Script #1.

The roll operator may seem like a fairly simple operator with little use by itself, but it does have some definite uses, especially in transitions between two screens. For example, one transition that can be created using only roll would be a "push" style transition, where it appears that one image is pushing the other off the screen. To accomplish this, use Script #2, which uses the principles from the first script with the roll operator.

Of course, compositing can be used in many other ways. In fact, if one does a "two-step" composition, virtually any effect can be achieved. A "two-step" composition refers to using an intermediary image, generally consisting of two colors. For our example, black and white will be used. Imagine that there is a white circle in the middle of a black background. This new picture should be the same size as the other two images.

To start the effect, load the first image. Then load the intermediary image using compositing and allow the transparent color to be white. If you were to view the picture now, there should be a circle in the middle of the image which contains the center of the other image. The rest of the screen should be black. Now save this temporary image and load the second image. Finally, load the temporary image using compositing with a transparent color of black. If you were to view the resulting picture, there should be a circle with the center of the first image which is surrounded by the second image. This example is essentially the same as example four in the tutorial section of the ADPro manual, except that this example does not use the alpha channel option, as some older versions of ADPro do not have it. It is important that you understand this example, as it is the basis for the following examples.

Animated Transitions

The use of the alpha channel gives an interesting effect, but is not terribly useful in its present form for animations. So, we must modify it so that it will allow us to change the image sequentially. The first step is to create a new intermediary image; however, this one must be three times as long along the x axis (i.e., if the original images are 320x200, the intermediary one must be 960x200). Now, draw a pure white line on the intermediary image (this assumes that the intermediary image size is 960x200) from 320,199 to 639,0. Now fill in the region below the line with the same white. Then, be sure that the region to the right of the white triangle is also white all the way to the end of the image. This is done so that we may gradually change the picture by moving the intermediary image along the x axis when compositing it onto the first image.

To create this new animation, increment the x position of the intermediary image when it is being composited onto the first image. The parameters for the compositor in ARexx are as follows:
LOAD [filename] Xoffset Yoffset %composition transRed

transGreen transBlue. See Script #3 for the complete code. This effect could also be done in FRED, but would likely require more work, and would not be as easy to tweak to get it exactly as you want it. This is a major benefit of ARexx scripts.

Of course, this script can be modified in many ways; for example, this transition could be performed vertically. Another interesting variation of this theme is using a multicolored intermediary image. To do this, create an image with dimensions of 740x200. The pixels from 0,0 to 419,199 should be black and the pixels from 420,0 to 739,199 should be white.

This image can be divided into three parts. The first part, from 0,0 to 319,199 should be entirely black and, when composited, will let the viewer see the entire first image. The second part, from 420,0 to 739,199 should be entirely white, to allow the second image to be seen. The third part, the middle, can contain anything you wish. For example, it could contain an eagle pulling the second picture overtop of the first picture, or anything you desire. If you have a 24-bit paint program, the middle can be quite realistic.

Perhaps you may even want to try using a digitized image. The only restriction is that the background of this middle section must be black if you wish it to be transparent. Another variant would be to use the roll operator in conjunction with compositing to give the impression that the first image is being pushed away by the second one. This variation is shown in Script #4.

The scripts provided with this article are relatively simple ones. They can be as complex as you desire, with very few limitations. The provided scripts should help in overcoming the initial hurdles in writing scripts if you are doing it manually, or, if you have one of the automation programs, by giving you new ideas on how to create new effects.

Listings

Script #1

```
/*
** A simple script that uses
** compositing to go from
** one image to another.
*/

ADDRESS "ADPro"
OPTIONS RESULTS

numframes = 30
fadefactor = 0
startimage = "Work:Pic1.IFF"
endimage = "Work:Pic2.IFF"
animname = "Work:TestAnim"

DO loop = 1 to numframes

/*
** Change the weight of the
** image to be composited.
*/

fadefactor=fadefactor+100/numframes

LFORMAT "IFF"
LOAD startimage

/*
** Add the second image to
** the first and remove decimals.
*/

truncFade = trunc(fadefactor)

LOAD endimage 0 0 truncFade

DITHER 1
RENDER_TYPE HAM
EXECUTE

SFORMAT "ANIM"
SAVE animname IMAGE APPEND
```

```
END

SFORMAT "ANIM"
SAVE animname IMAGE WRAPUP
```

Script #2

```
/*
** A sample script using the
** roll operator to "push"
** one image off the screen.
*/

ADDRESS "ADPro"
OPTIONS RESULTS

numframes = 20

/*
** Generally zero.
*/

rightrollval = 0

/*
** Generally equal to the
** width of the images.
*/

leftrollval = 320
picwidth = 320

startimage = "Work:Pic1.IFF"
endimage = "Work:Pic2.IFF"
animname = "Work:TestAnim"
tempmic = "RAM:TempPic.IFF"

DO loop = 1 to numframes-1

/*
** Increment the roll amount
** for the two images and truncate
** any decimal value.
*/

rightrollval = rightrollval+picwidth/numframes
leftrollval = leftrollval+picwidth/numframes

truncRight = trunc(rightrollval)
truncLeft = trunc(leftrollval)

LFORMAT "IFF"
LOAD startimage

OPERATOR "ROLL" "RIGHT" truncRight NO_WRAP

/*
** Puts the first image into
** a buffer, where it is loaded
** later using the compositing
** option to add it to the second
** image.
*/

SFORMAT "IFF"
SAVE tempmic RAW

LOAD endimage
OPERATOR "ROLL" "LEFT" truncLeft NO_WRAP

LOAD tempmic 0 0 100 0 0 0

DITHER 1
RENDER_TYPE HAM
EXECUTE

SFORMAT "ANIM"
SAVE animname IMAGE APPEND

END

/*
** ADPro's ROLL operator will
** not allow an image to be rolled
** by the width of the image,
** therefore, the final image must
** be loaded separately.
*/

LOAD endimage

DITHER 1
RENDER_TYPE HAM
EXECUTE
```



```
SFORMAT "ANIM"
SAVE animname IMAGE APPEND
SAVE animname IMAGE WRAPUP
```

Script #3

```
/*
** A script which uses a
** middle B&W image as a
** pattern for a transition.
*/

ADDRESS "ADPro"
OPTIONS RESULTS

numframes=20

/*
** Size of the intermediate image
*/

intermediateX = 960
imageX = 320 /* Picture size */

sizeX = intermediateX - imageX
whereX = 0 /* How much to roll */

startpic = "Work:Pic1.IFF"
endpic = "Work:Pic2.IFF"
intermediate = "Work:Background.IFF"
bufferfile = "RAM:TempPic.IFF" /* Temporary file */
animname = "Work:TestAnim"

DO loop = 1 to numframes
  LFORMAT "IFF"
  LOAD startpic

/*
** Loads and composites the
** "transition" screen, then
** saves it for later composition.
** Uses black as the transparent
** color so the first image is
** unchanged where black existed
** in the intermediate, but white
** was laid directly onto the
** original image.
*/

  roundX=trunc(whereX) /* Makes an integer */

  LOAD intermediate roundX 0 100 0 0 0

  SFORMAT "IFF"
  SAVE bufferfile RAW

  LOAD endpic

/*
** Composites the image
** saved earlier.
*/

  LOAD bufferfile 0 0 100 255 255 255

  RENDER_TYPE HAM
  EXECUTE

/*
** Changes the offset for
** the next frame.
*/

  whereX=whereX-sizeX/(numframes-1)

  SFORMAT "ANIM"
  SAVE animname IMAGE APPEND
END

SFORMAT "ANIM"
SAVE animname IMAGE WRAPUP
```

Script #4

```
/*
** A script which uses a 24-bit
** intermediate image as a
** pattern for the transition.
*/
```

```
ADDRESS "ADPro"
OPTIONS RESULTS

numframes = 40

width = 320 /* Width of the image */
middle = 100 /* Width of the middle block */

sizeX = width + middle
whereX = 0 /* Generally zero */

startimage = "Work:Pic1.IFF"
endimage = "Work:Pic2.IFF"
intermediate = "Work:ColorBackground.IFF"
tempmic = "RAM:TempPic.IFF" /* A buffer file */
animname = "Work:TestAnim"

DO loop = 1 to numframes

/*
** This changes the value required for
** rolling the first image to the left.
** If it is negative, ADPro does not roll.
*/

  roundX = trunc(whereX)

  rollvar = -roundX - middle

  LFORMAT "IFF"
  LOAD startimage

  OPERATOR "ROLL" "LEFT" rollvar NO_WRAP

/*
** Loads and composites the
** intermediate image onto the
** original, leaving the original
** untouched after the roll, but
** adds the middle image giving
** movement (i.e., biplane, logo).
** Also changes black portion of
** screen to white for later
** composition.
*/

  LOAD intermediate roundX 0 100 0 0 0

  SFORMAT "IFF"
  SAVE tempmic RAW

  LOAD endimage

/*
** Changes value needed for moving
** the second image to the left
*/

  rollvar = sizeX + roundX
  OPERATOR "ROLL" "RIGHT" rollvar NO_WRAP

/*
** Loads and composites the first
** image onto the second one.
*/

  LOAD tempmic 0 0 100 255 255 255

  DITHER 1
  RENDER_TYPE HAM
  EXECUTE

/*
** Change the offset of
** the next frame.
*/

  whereX=whereX-sizeX/(numframes-1)

  SFORMAT "ANIM"
  SAVE animname IMAGE APPEND
END

SFORMAT "ANIM"
SAVE animname IMAGE WRAPUP
```

•AC•

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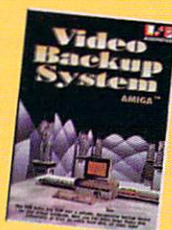
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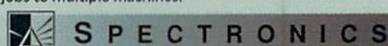
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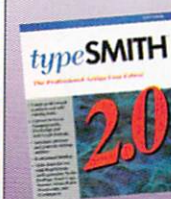
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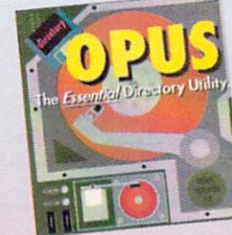
This board assembly plugs on the back of the CD32, still allows the use of the CD32 Full Motion Video Module in its normal slot, and provides the interfaces from the unit:
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AREXX

by Merrill Callaway

Using AREXX DO Loops to Solve Combinatorial Problems

This month we are going to do a bit of "recreational mathematics" with AREXX to solve a brain teaser about numbers. The problem was sent to me by Neeva Pedersen, a pen pal of mine who builds houses for Habitat for Humanity all over the U.S. She figured that I'd enjoy solving this little problem.

As it turns out, AREXX is ideal for finding answers to combinatorial problems of this sort. Here is the brain teaser:

Fill in the nine blanks with the integers from 1 to 9 inclusive, using each digit in any position but only ONCE, so that the following multiplication expression is true:

$$(_) \times (_ _ _) = (_ _ _).$$

To clarify the notation, let the letters A, B, C, D, E, F, G, H, I represent the digits from 1 through 9. We do not know what the

assignments are; only that the letters (and therefore the digits they represent) are mutually exclusive. Then the problem may be re-written as

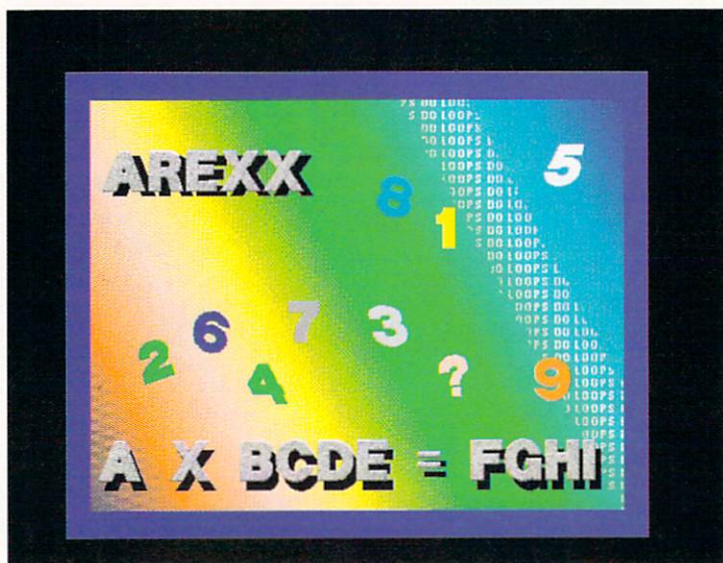
$$A \text{ (times) } BCDE \text{ (equals) } FGHI.$$

where the letters stand for the mutually exclusive digits 1 through 9. This is the kind of problem that can use up a lot of paper unless you find an algebraic or a number theoretic solution right away.

Before we try to write an AREXX program to solve it, let's apply as much logic as we can to the problem. We have a one digit number times a four digit number equals a four digit number. The first fact emerging is that A cannot equal 1, because 1 times anything is itself, contradicting our constraint that the digits be mutually exclusive. Also, A cannot equal 5 because any integer times 5 ends in either 0 (not in the set of digits allowed) or 5 (not mutually exclusive with 5). If A=9, then the smallest number allowed for BCDE is 1234. But 9 X 1234 is five digits long, so A cannot equal 9.

Even though we have eliminated a large number of possible combinations, we are still a long way from trying all combinations of digits. How should we proceed?

Since a computer can perform millions of calculations per second, it is relatively simple and efficient to program all sorts of "brute force" solutions to problems involving combinations of numbers, where a paper and pencil solution would be difficult or out of the question.



Program Planning

As far as computers are concerned with mathematics, there are at least two ways to find solutions: apply a formula or search all combinations for the answer. If you know the theory behind something, you may calculate the results directly from a formula.

For example, if you have a time, speed distance problem you wish to solve, you simply plug in the numbers into the formula $D=rT$ (Distance equals rate of speed multiplied by time). Formulas may be algebraically solved for one variable or another depending on what values we know. Number theoretic and combinatorial problems do not always lend themselves to ready-made formulas, however.

Computers have revolutionized the finding of numeric solutions to problems too complicated to solve with algebra or calculus. Since a computer can perform millions of calculations per second, it is relatively simple and efficient to program all sorts of "brute force" solutions to problems involving combinations of numbers, where a paper and pencil solution would be difficult or out of the question. Combinations of numbers are widely used in encryption schemes. In fact, there is a branch of mathematics and computer science devoted to the prevention of brute force solutions to encryption schemes!

ing this out is 10,080 a much more reasonable number but still large as far as paper and pencil go. Later, we will show a way to reduce this to only 1520 numbers if we constrain the answers to four digits.

Do Loops to the Rescue

Any time you have to count something with an ARexx program, you should think, "Do loop". Since we are going to count digits, we can use the Do Loop Iteration Specifier directly as the digit we are combining with other digits. If we want to SAY all the digits OK to put into the first position, A, in the puzzle expression, we should construct this loop:

```
Do A=2 to 8
  if A=5 then iterate A
  say A
end A
```

The output will be 2, 3, 4, 6, 7, 8. Note the way to iterate the loop early if A=5. The iterate instruction means to go to the end of the loop, increment the counter and continue. If the counter is already at the end, an iterate instruction causes the loop to finish.

Now that we have counted the first position, how do we count the second position? We need to nest one loop inside another. In

As far as computers are concerned with mathematics, there are at least two ways to find solutions: apply a formula or search all combinations for the answer.

Our little problem comes under the general heading of combinatorial analysis. We start by finding all the ways nine things can be grouped nine at a time.

How Many Possibilities?

We have nine digits, and we want to know how many ways can we select all nine digits without replacement? If we ignore all the logical insight we reasoned out above, such as A does not equal 1, then the first position, A can be filled in 9 ways. Once we have selected a digit to put into position A, we have only 8 digits left, so we can fill position B in 8 ways. Now the total ways we can fill both positions A and B is 9×8 or 72 ways, because for every way we fill A, there are 8 ways to fill B. Extrapolating this logic to all 9 positions, there are $9 \times 8 \times 7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1$ ways to fill the nine places. In mathematical notation this number is written $9!$ for "nine factorial". $9!$ is a large number, 362,880; certainly too large to try writing them all on paper!

We need an ARexx program to help us look through all these possibilities. If we apply our logical eliminations above for the one digit number A cannot = 1, 5, or 9, then the number of possibilities becomes $(9-3) \times 8! = 241,920$, still a very big number. How many true equations can we make, however? This number is much smaller than all the ways of filling in the blanks. Our program will take advantage of the constraint that the equation must be true. That is, the first five numbers determine the next four if the equation is true.

How many combinations of these five numbers are there (taking account of our logical constraints)? The first number may be chosen in 6 ways; the next four in $8 \times 7 \times 6 \times 5$ ways. Multiply-

the nested loop specifier, we will not worry about whether the A and B counters are mutually exclusive or not, we just want to count all unconstrained possibilities. We put in a conditional test to iterate the outer loop if the numbers A and B are not mutually exclusive. The nested loop might look like:

```
Do A=2 to 8
  if A=5 then iterate A
  Do B=1 to 9
    if B=A then iterate B
    say A 'x' B
  end B
end A
```

The output would be 54 pairs of numbers such as 2×1 , 2×3 , 2×4 , etc. We are on the way to making up the puzzle expression to test for validity. Notice our technique assumes we know nothing about combinatorials. It simply allows us to use ARexx's extremely powerful string handling features to build up an expression to test. The constraints are simply conditional tests to force an iteration of the appropriate loop if the condition is met. Because of symmetry, we may expect to nest a total of five do loops to combine the numbers in the first half of our puzzle expression: $A \times BCDE = ????$.

The listing shows that we have to test for one more equality each time we nest a do loop. Note that the iterate instructions specify which loop to iterate by naming the iteration specifier or counter. The end instructions also have the iteration specifier named. If no specifiers are named, the program iterates the loop in which the test occurs.

Explicitly naming the specifiers after an iterate instruction is not necessary if the program is to iterate the loop in which the iterate instruction occurs, but it helps readability. Naming the specifiers is necessary if the program is to iterate a loop at a higher level than the loop in which the iterate instruction occurs. For example in the listing, the inner Z loop contains conditional statements that iterate the next higher level E loop, and the E loop has tests that may iterate the outer A loop. The specifiers must be explicit here. With nested loops it is always good to put them in to aid understanding.

Testing the Test Number

So far, the loops have collected a sequence of digits, ABCDE chosen uniquely from the digits 1 through 9. In the next to inner loop, E, the variable, fnum, is the result of a concatenation of B, C, D, and E. AREXX "types" this string as an integer because it is composed of four digits. Therefore the test number, tstnum=num=A*fnum is a string of digits to be tested for the constraints of the puzzle. The first test is to see if it is longer than four digits, in which case the loop iterates the outer loop, A. This is a case of needing to specify the loop to iterate.

The program will still work without specifying loop A, but will take four times as long. The reason? The program must do a lot of unnecessary tests. If A is not specified, then the program iterates loop E, which continues to count insignificant digits which continue to cause a string longer than four digits to result from the test multiplication. Keep in mind that the counters are increasing. If B has already reached a point at which a string longer than four places occurs, then all subsequent (larger) B's for that given A will also cause strings longer than four places. Therefore, it is necessary to iterate A and start B over again. This test reduces the set of test numbers to only 1520. This number is arrived at empirically.

As an exercise, put in k=1 at the start of the program and k=k+1 immediately after the test number is calculated. At the end next to the Time('E') function,

say k-1 'test combinations.'

will display the actual number of combinations tested, 1520. This number is lower than the "theoretical number" 10,080, because the test for length iterates loop A early about 85% of the time. This demonstrates how logical thinking can help to speed up programs by eliminating as many unnecessary tests as possible.

The four digits represented by FGHI are completely determined if we multiply the first two numbers, but there are still tests to be done, because there are constraints on FGHI, too. The digits must not repeat and they must not be equal to any of the former digits, A, B, C, D, or E. These digits must be parsed from the result string of the test multiplication, tstnum. They are compared one at a time to A, B, C, D, and E in a conditional test. If they match, the inner loop E iterates because there is no point in going on with this test answer. Again a higher level loop is iterated. The case of the repeated digits in our test number is a bit more subtle. We initialize a boolean array, hadthis.=0 every time we get a test answer, num. Once the digits have been parsed off, the test

if hadthis.digit then iterate E

tests for the digit in the array. If it is found there, (that is, hadthis.digit=1) then the next higher loop, E is finished, because repeating digits are not allowed. If the test is not true, the digit has not occurred before. The very next instruction sets the array

element hadthis.digit=1, so if it occurs again during the parse loop, Z, it will trigger the forced iteration of the loop E, in the "if hadthis.digit then iterate E" test.

The final instruction in the loop E is the SAY clause that states the answers. If the test number gets this far it's a valid answer! Note the use of the concatenation operators to reconstruct the number strings. The Time() functions are included to reset and state the elapsed time it took to find all solutions to our problem. Since we have a variable, E, make sure to quote the 'E' in Time('E') so that there is no invalid function argument error generated. There are enough coding ideas in this program to help you solve all sorts of combinatorial type problems in statistics, probability, and number theory.

Listing

```
/* NumPuzzle.rexx */
/*
** Copyright ©1994 by Merrill Callaway
** Solves the puzzle A x BCDE = FGHI
** where A-I represent the digits 1-9
** each used only once. The equation
** must be true.
*/
call time('R')

do A=2 to 8
  if A=5 then iterate A
  do B=1 to 9
    if B=A then iterate B
    do C=1 to 9
      if C=A then iterate C
      if C=B then iterate C
      do D=1 to 9
        if D=A then iterate D
        if D=B then iterate D
        if D=C then iterate D
        do E=1 to 9
          if E=A then iterate E
          if E=B then iterate E
          if E=C then iterate E
          if E=D then iterate E

          fnum=B||C||D||E
          num=A*fnum

          if length(num)>4 then iterate A

          tstnum=num

          hadthis.=0
          do Z=1 to 4
            parse var tstnum digit +1 tstnum
            if digit=0 then iterate E
            if digit=A | digit=B | digit=C |
              digit=D | digit=E then iterate E
            if hadthis.digit then iterate E
            hadthis.digit=1
          end Z

          say num 'A 'A' B 'B' C 'C' D 'D' E 'E' 'OK!'

        end E
      end D
    end C
  end B
end A

say time('E')
exit 0
```

•AC•

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Fall River, MA 02722-2140

Amazing Computing

Vol.8, No 8, August 1993

Highlights Include:

- "Amiga Vision Professional", review Commodore's upgraded authoring system, by Douglas J. Nakahara
- "Art Department Professional 2.3", review of the latest release of AdPro from ASDG, by Merrill Callaway
- "Professional Page 4.0", the latest incarnation of Pro Page, by Rick Manasa
- "Pseudo Radiosity Effects", why ray tracing is not an accurate model of true light behavior, by Mark Hoffman
- "T-Rex Professional", a review of the latest release of T-Rex from ASDG, by Merrill Callaway
- ALSO: AC Phone Book: A directory of Amiga Developers!

Vol.8, No 9, September 1993

Highlights Include:

- "Adventures with Aladdin", Part III of this tutorial series on Aladdin 4D, by R. Shams Mortier
- "CanDo", First installment of this series for CanDo programmers, by Randy Finch
- "Caligari 24", Review of version 3.0 of this 24-bit software, by R. Shams Mortier
- "Coming Attractions", A look into the future attractions in Amiga games, by Henning Vahlenkamp
- ALSO: WOCA—Australia & Summer CES!

Vol.8, No 10, October 1993

Highlights Include:

- "Making Waves", Focus on the wave requester in Part IV of the Aladdin series, R. Shams Mortier
- "Clouds in Motion", Animated clouds in Scenery Animator, by R. Shams Mortier
- "Media Madness", Discover what it can do for Bars&Pipes, by Rick Manasa
- "Bars&Pipes Professional 2.0", review by Rick Manasa
- "Bernoulli MultiDisk 150", A review of this great Iomega drive.
- ALSO: Commodore's new CD32!

Vol.8, No 11, November 1993

Highlights Include:

- "CanDo", This installment covers developing a custom object by combining several standard CanDo objects, by Randy Finch.
- "Brilliance", A complete review of this hot new paint and animation program from Digital Creations, by Frank McMahon.
- "Online", The introduction of this new telecommunications column for the Amiga, by Rob Hays.
- "Get Graphic: Digital Image F/X", The introduction of AC's new graphics column, by William Frawley.
- "Picasso II", A review of one of the best new graphics cards available, by Mark Ricken.
- ALSO: WOCA Pasadena: Commodore introduces CD-32! Plus, the incredible LightRave, a Video Toaster emulator!

Vol.9, No 1, January 1994

Highlights Include:

- "Designing Holiday Cards", Using your favorite DTP programs to create holiday cards, by Dan Weiss.
- "Accent on Multimedia", First in a series exploring the history and concepts behind multimedia, by R. Shams Mortier.
- "Primer Printer", Review of this low end, inexpensive color printer, by Merrill Callaway.
- "Commodore 1942 Monitor", In-depth study of this comprehensive Amiga paint package, by R. Shams Mortier.
- ALSO: Commodore Shareholders Movement

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- "Amiga on Internet", Exploration of Internet and its services, by Henning Vahlenkamp.
- "EGS 28/24 Spectrum", A review of this hot graphics card from GVP, by Mark Hoffman.
- "Magic Lantern" A new animation compiling program for all Amiga display modes, by R. Shams Mortier.
- "Get Graphic: Digital Image F/X", Using ARexx, Opal Paint, ADPro, and DeluxePaint to process images, by William Frawley.
- ALSO: Exclusive interview with Lew Eggebrecht!

Vol.9, No 3, March 1994

Highlights Include:

- "Amiga Stars at Medical Convention", Medical multimedia on the Amiga, by Michael Tobin, M.D.
- "CanDo vs. HELM", Head-to-head review of two leading Amiga authoring systems, by Randy Finch.
- "PD Update", This month, a description of AlertPatch 2.9 and other

shareware and freeware utilities, by Henning Vahlenkamp.

"Scala MM300", A review of the program believed to be "hot stuff" for anyone doing interactive media work, by R. Shams Mortier.

ALSO: And furthermore: The Amiga takes the stage in the Broadway production of The Who's Tommy!

Vol.9, No 4, April 1994

Highlights Include:

- "Computer Cafe Serves Up Shasta", The design team at Computer Cafe creates incredible "can-a-mation" for a beverage commercial, by Robert Van Buren.
- "Aladdin 4D Review", Comprehensive look at the latest version of Aladdin, by R. Shams Mortier.
- "AGA Chipset and the Amiga: CD32 to the Rescue!", What does the future hold for CD32 and Amiga games? Jeff James has the inside scoop, by Jeff James.
- "Sync Tips", Video returns to the pages of AC, featuring Oran Sands.
- ALSO: Exclusive interview with renowned Amiga artist Jim Sachs.

Vol.9, No 5, May 1994

Highlights Include:

- "Desktop Publishing for Profit", Resume design: A simple and profitable way to break into the desktop publishing field, by Dan Weiss.
- "24-bit Painting Techniques", Innovative tips and tricks anyone can use to make their computer paintings look better, by Mark Hoffman.
- "PD Update", This month, MegaBall 3.0, Motorola Invaders, New World, and more, by Henning Vahlenkamp.
- "MicroBotics MBX-1200Z", A review of this handy math coprocessor and 32-bit RAM add-on card for the Amiga 1200, by Rob Hays.
- ALSO: The long-awaited Amiga 4000 Tower is showcased at the Cebit show in Germany.

Vol.9, No 6, June 1994

Highlights Include:

- "CanDo", Select, enter, and play music files, by Randy Finch.
- "NAB show report", AC travels to Las Vegas for the latest releases and announcements.
- "Making an Article Database", Create a simple database to keep track of magazine articles using the HELM authoring system, by Doug Nakahara.
- "A Survival Guide to CD-ROM Part I", The first in a four part series designed to take the confusion out of CD-ROM devices, by Mark Ricken.
- "Bubbles vs Heat", Fargo's Primera Color Printer & Canon's BJC-600, by Dwinn Craig.
- "1994 Reader's Choice Awards Ballot",
- "TypeSmith 2.0", Review, by Merrill Callaway.
- "The A 64 Package 3.0", This new release brings quality C64 emulation to the Amiga, by Henning Vahlenkamp.
- "MIDIquest 4.5 & TECHquest", Review, by Shams Mortier.

Vol.9, No 7, July 1994

"Accent on MultiMedia Part IV", This installment investigates the hardware end of the Amiga's involvement in MultiMedia by R. Shams Mortier.

"1994 Reader's Choice Awards Ballot", Amazing Computing's 3rd annual Reader's Choice Awards. Cast a vote for your favorite product.

"Brilliance 2.0", A review of the latest update to Digital Creations' Brilliance/True-Brilliance by R. Shams Mortier.

"Cocoon Morph", DevWare's Cocoon morphing program features motion morphing and more by R. Shams Mortier.

"FinalWriter 2.0", New menu items including Undo/Redo, Font/Style Strip and faster graphics are covered in this upgrade review by Merrill Callaway.

"Digital Image Special F/X", Displaced Textures and other new operators found in ADPro 2.5 are explored in Part 9 in this series by William Frawley.

"New Products & Other Neat Stuff", Mr AMOS Club Programmers Pack, The DataFlyer SCSI+, Cinema 4D, DesktopMAGIC 2.0, DICE3.0, Alpha Paint, Sequel v1.2, Fury of the Furries, Super Methane Bros., Brutal Football, Fire & Ice round out the items found in this issue's New Products.

"Bug Bytes", Amiga modem connection problems; Ramworks and Workbench 2.0 revisited; Workbench 2.1 Gurus & more; GVP's I/O Extender fix are among the topics discussed in this month's Bug Bytes by John Steiner.

"Inside ARexx", Create a Glossary function for Final/Writer using ARexx by Merrill Callaway.

"Sync Tips", Video color correction with your Amiga by Oran Sands.

"Diversion", This month: Hired Guns from Psychosis Ltd., Fighter Duel Pro 2 from Jaeger Software, and A-Train Construction Set from Maxis Software.

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DIGITAL IMAGE SPECIAL FX PART XI:

Fun With Text

Create exciting styles of text with Professional Draw, Pagestream, OpalPaint, ADPro, and ImageFX

by William Frawley

In times past, the spoken word was the primary means of communication for us humans. Whole family histories, mythologies, and even esoteric mystic rituals were passed from generation to generation using only the utterances of the vocal chords. Indeed, our ocean cousins the cetaceans rely exclusively on sonic communication for transference of knowledge from ancestor to progeny. Nowadays however, every aspect of our species is chronicled in writing on enough paper and other media to fill an entire volume of something the size of a small state. Alas, welcome to corporate society in the 20th Century.

So what does this all mean anyway? Well, one can notice, upon reflection, the shift in the traditional role of type from that of informing or communicating ideas to an emphasis in modern society on product advertising and image. Here, text is to the visual mass media as sound bites are to the radio industry. For some of you, this is how you earn your livelihood, but, for the rest of you, the interest in informal typography may simply be another way to explore your existing Amiga software. If that's the case, let's have some fun with text!

Neon Type In Professional Draw

For this tutorial, Professional Draw version 3.0 is being used. Begin by deciding what it is you'd like to create. Is it text or some other object? Whichever is the case, you'll be drawing or tracing using one of the drawing tools located to the right side on the tool bar. The goal here is to create an object using only the outline or line weight as the substance, as Fill Mode will not come into play here. Therefore, you cannot use a text nor an ellipse object directly. For instance, if you plan on using your favorite font, you'll need to manually trace its innards with singular strokes using the Curve Tool, since using the function Text -> Graphic would produce a filled double-outline which will not work for this procedure. Also, any ellipses used as an element must be converted to a graphic object with the Ellipse -> Bezier function so we may access the object's Line parameters. For this exercise, I'll describe the process to you from a generic standpoint, but feel free to follow my example as shown in Figures 1A-D.

First, trace or draw out the basic shape using one of the supplied drawing tools — the Curve, Rectangle, Ellipse or Freehand tool. The procedure must be one continuous stroke or a singular shape in order to yield exactly one object. As seen in Figure 1A, I traced a text object using the Freehand tool in order to simulate the effect of one of those ubiquitous neon beer signs hanging in your local tavern's window. Remember, if you've used the Ellipse tool, you must then use the menu item Ellipse -> Bezier so it becomes alterable.

Next, make sure that under the Attributes menu item Fill, None is selected for this object. Now choose a Line Weight of 2 points and a Line Join of Round to mimic the glass ends of a neon sign. Select a Line Color with very little saturation and a high value component, say a light red. You may have to enter the Palette in order to create your own if there are none currently available to your satisfaction. Now for the final phase.

Clone this object by pressing the Tab key. Move the new object off to the side so it is out of the way of the original object. With this new object still selected, change the Line Color to a darker value and fully saturated version of the same hue. Also, change the Line Weight to a Custom value of .25 inches. Drag this object directly underneath the original object so they are both centered with one another and use the Send To Back command on the new object to place it behind the skinny guy.

Using the Marquee tool, drag select around both objects so they are both active and then select the menu item Blend (Figure 1C). In the Blend Options requester, set the Number of Steps to between 5 and 10 and leave the transformation type to the default Linear. Okay the requester and you should be looking at your new neon object (Figure 1D). You may now want to again use the Marquee tool to select all the layered objects in order to group them for ease of handling later on.

This Blend function works great for creating color blends and also gives the ability to morph one object into another via a shape blend. A handy little function. However, if you don't have any of the available structured drawing programs for the Amiga, you can still accomplish identical results with Pagestream with just a little more effort.

Chrome Type In Pagestream

Despite the name, a chrome style in essence is the exact same result as the neon style except for the color scheme. With a few minor alterations in procedure to allow for functional differences between ProDraw and Pagestream, we can crank out some chrome that will make even Detroit jealous. Okay, a slight exaggeration on my part. Let's give it a try anyhow.

FunWithText_1 (Right)

Creating a neon style of type. After tracing out the text with the Freehand drawing tool, change the color and line type (A). Change the Line Join to Round, clone this, alter the new object's color to a more saturated version and finally increase the Line Weight to .2 inches (B). Place underneath the original, select both and then linearly Blend the two in 5 steps (C) resulting in lovely neon objects (D).

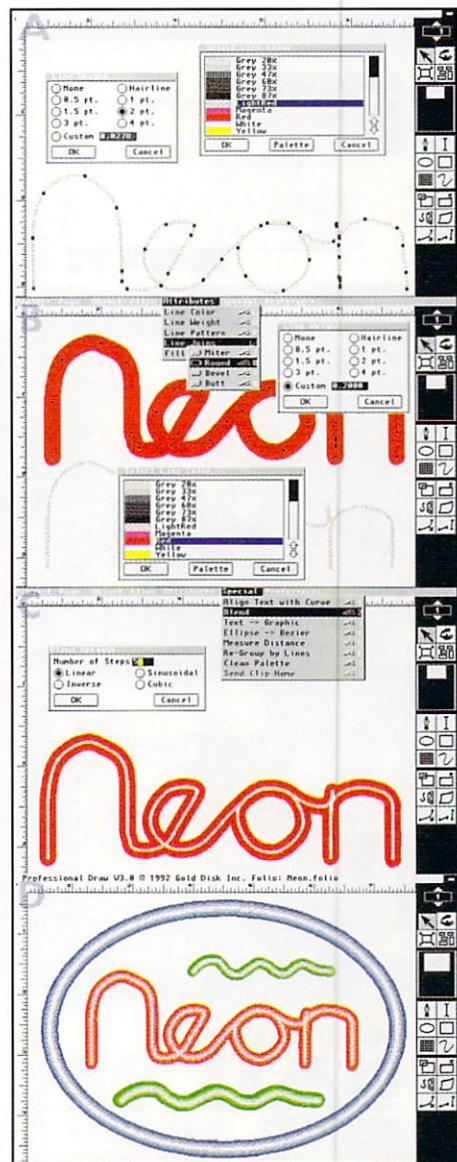
In Pagestream, trace or draw your object using one of the supplied drawing tools. Unlike using ProDraw, the final object does not have to be composed of one continuous line. You may use as many broken lines, circles and rectangles as necessary because our approach this time will, out of necessity for this version 2.22 of Pagestream, not make any use of a Blend type function. Again, if text is your goal, you cannot simply use the Text tool and alter the line parameters because there are none for the text itself, only for the text's bounding box. You must, as I did in Figure 2A, use one of the drawing tools, in this case the Polygon tool, to manually trace out the basic shape of the text.

Once you have your lines drawn, drag out a bounding box around all the elements and Group them together. You may also delete the text if you were using it as a tracing template as it is no longer needed. Now select the Object-Line Style menu item and in the requester choose Rounded Edges for both beginning and ending sides, a Width of 18 points, and Black for the color (Figure 2A). Okay the requester.

Next, select the Object-Duplicate menu item to access the Duplicate Objects requester. Enter 4 in Copies and change both the Vertical and Horizontal Offsets to 0. This will make four copies of this object, all placed exactly on top of each other. Now select the topmost copy and change its Line Width to 10 and its Line Color to a Grey10% (very light grey). If you haven't already, you'll need to arrange a spread of greys from black to white using the Edit Color Palette for this effect. Use the Send To Back command to access the next available object in the stack and continue to increment the Line Width by two and darken the grey Line Color until you reach the original object, whose settings remain as they are. Then send this object to the back. Is it chrome or is it Memorex (Figure 2B)?

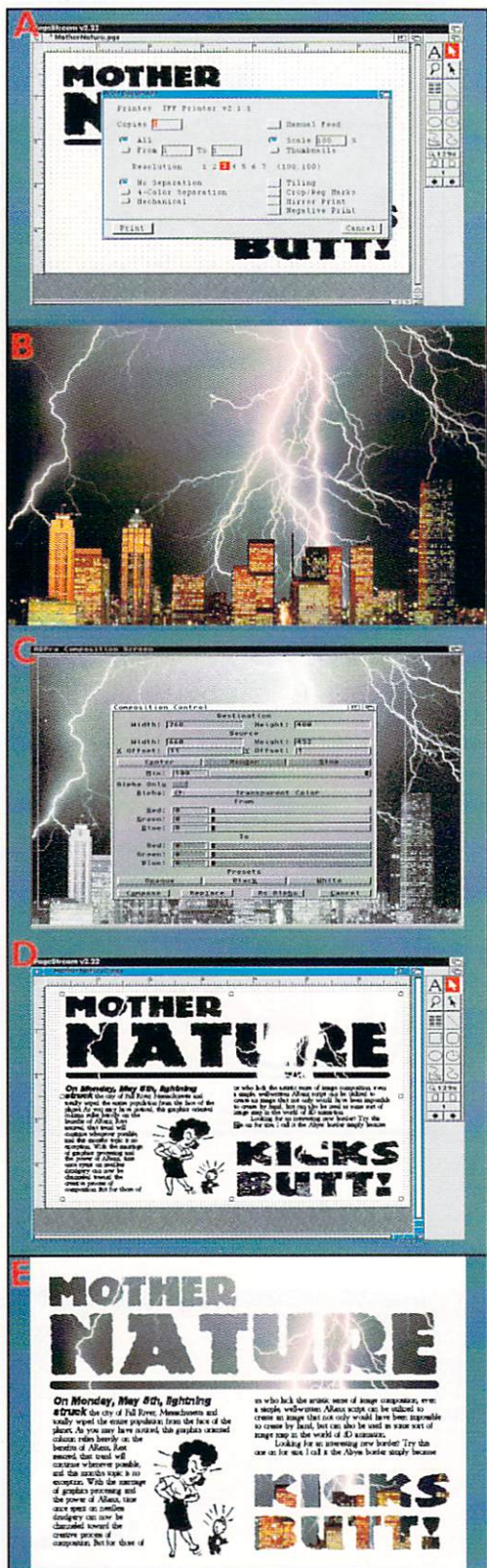
Photo Type Using Pagestream And ADPro

Exactly what is Photo Type? Briefly, instead of a solid or gradient color font, the type uses an image to fill the interior. Both this text and related image filling the text more effectively communicates to the reader the theme of a page or graphic project. It is a fairly straightforward procedure to accomplish. The basic idea is to take some text and composite it with a background image while "matting" out the color of the text so that only the image appears in the area once occupied by the text. To accomplish this, we'll use Pagestream to create the text and ADPro for the compositing engine. Of course, any image processing



FunWithText_2

Using the same principle as neon type for chrome, except slightly different procedures in Pagestream. First, the object, in this case text, is outlined with the Polygon tool and the Line Style parameters are changed (A). After grouping the individual elements, the object is Duplicated several times but with no offset, so all elements lie exactly on top of each other (B). Using the Send To Back command, the Line Styles of each successive element are then adjusted to 'blend' in color and width with its neighbor for a convincing chrome effect. A comparison showing the difference between the native Pagestream chrome and an imported ProDraw clip. Note the ragged artifacting to the edges of the clip (C).



FunWithText_3
 Pages to create Photo Headline Type. Arrange the text in Pagestream and then save as an IFF file at the desired resolution (A). Load an appropriate background image into ADPro (B). Composite the text image over the background image with the text color transparent (C). Import the new Photo Text back into Pagestream as an IFF image, now replacing the original text previously on the page (D). The composed page is now ready to be taken to the printer (E).

program such as ImageFX, OpalPaint and ImageMaster will work, but ADPro is slightly faster.

We will be using Pagestream to create the text because if you are producing an 8 1/2 x 11 magazine ad, for example, and your text runs the full width of the page, you'll need an image to fill that text approximately 2400 pixels wide. And with Pagestream's IFF output option, we can then have access to the entire Postscript library of fonts and be able to maintain print resolution, as long as we have an image that large. However, for this example we'll stick to using a screen-size image. Please refer to this same column in the March '94 issue of *Amazing Computing* for further explanation of "Pagestream Super-Bitmaps."

To begin, set your page dimensions to about 7"x5", pick a font and large point size and then type your text. Select the Global menu item Configure Printer and in the Print Document requester load the IFFILBM.Printer driver that came with Pagestream (Figure 3A). Now Print this document with a resolution of 100, 100 dpi to an IFF file given an appropriate name. Check this file with an image viewer, note its size and then quit Pagestream.

Next, run ADPro and load in an appropriate background image that is at least as large as the text image you just created with Pagestream (Figure 3B). Now Composite the text image onto the background image making sure that you choose black (0,0,0) as the transparent color (Figure 3C). Crop this resulting image as close to the photo text as possible and then save it as a 24-bit IFF for importing back into your page layout software (Figure 3D). When the project is fully composed, you'll see how much the Photo Type adds to the overall completeness of the idea (Figure 3E).

OpalPainting And ImageFX Graffiti

Next, we'll take a look at choosing the proper parameters to set in order to get a convincing spray paint look for text painted over a background image. Both ImageFX and OpalPaint contain similarly excellent tools for achieving this effect. The key to realism in both of these programs lies in the use of the Alpha channel to "texture" the application of the paint in the main channel.

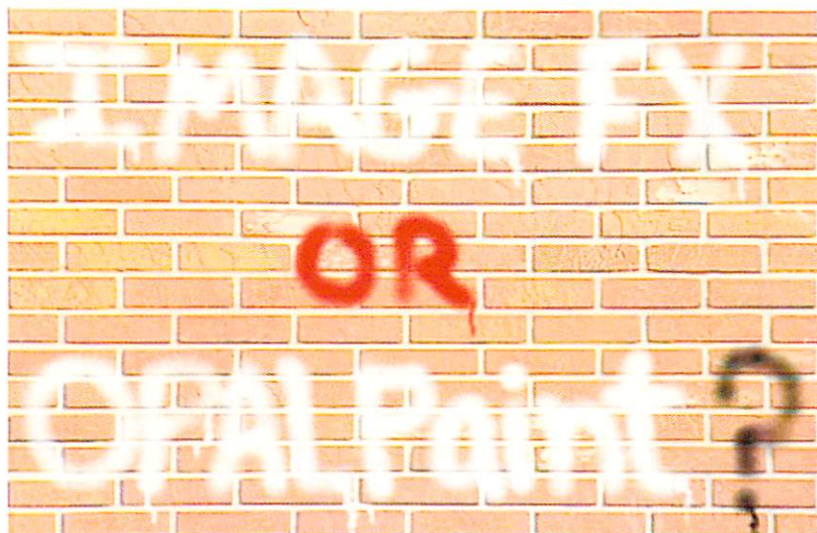
By copying the exact same background image to the Alpha channel, the bright/dark values will act as an 8-bit frisket or mask to control what areas receive more or less "paint." In other words, the darker areas in the Alpha channel will block most of the color from being applied, whereas the lighter areas will allow virtually all the color "through the holes." So with the identical image in the Alpha buffer, those areas that are dark in the original image, say the crevices of a brick, will remain dark even when white "paint" is liberally applied.

Try this. Load an image into either ImageFX or OpalPaint; a texture map of bricks do nicely. In ImageFX, from the Toolbox select Alpha and then Copy To Alpha to place an 8-bit copy of the image into the Alpha channel. Now double-click the Airbrush Tool and set the Airbrush Options as follows:

MODE:
 Matte BLEND:
 50% ALPHA:
 Use As Frisket RADIUS:
 15 NOZZLE:
 50 ROUGH:
 25 SPRAY MODE:
 Spray

Pick a color and start painting. Draw as fast as you would with a real spray can (medium speed), depending on how thick you want the paint to be applied.

In OpalPaint, once the image is loaded, enter the Alpha Work Mode by double-clicking on 'AL' to enter the Alpha Paint Options



FunWithText_4

With the proper brush settings and the use of the Alpha channel as a frisket, a very realistic spraypaint effect can be achieved in both ImageFX and OpalPaint.

panel for the Alpha channel. Once there, select Grey Scale for the Edit Mode and Paste Image under the Alpha Functions section. As before, this copies the image in the main channel to the Alpha channel in grey scale.

Now reenter the Edit Image 'PT' Work Mode and double-click on the largest Circular Brush tool to edit the nozzle parameters. Select the Artist Tool Airbrush with a Tool Weight of around 50 and Re-Size the nozzle to about 1 cm. Exit this requester.

Lastly, access the Transparency Control requester under Trans and change the transparency mode to Alpha with a Strength of 100%. This will allow the Alpha channel to act as a transparency mask for your painting operations. That's it. Now start spray-painting, but try to keep it clean (Figure 4)!

Rough-Edge Type In Professional Draw

Well, this brings us full circle back to ProDraw for a quick look at how to rough up the edges of your headline type. Hey, where ya going? This is easy! But before we do begin, have you tried converting some of your Postscript fonts into Compugraphic format for use in ProDraw? Believe it or not, the included FontManager actually works for most of the Postscript fonts that I have encountered. Just pick and click, then run the CGUpdate utility so ProDraw recognizes these new fonts and you have expanded your arsenal of available typefaces to manipulate. So run ProDraw and let's get started.

After typing some text, use the Text->Graphic function to allow us to edit the Line parameters (Figure 5A). Make sure the Line and Fill Color are the same, preferably one of the primary colors so you get a better idea of how this works. Next, set the Line Weight to 2 points.

there is no way to turn a text object into a graphic made up of bezier curves in Pagestream, importing a ProDraw clip made up entirely of bezier curves allows you to properly edit the Line and Fill Styles of the new text object for more flexibility (Figure 5D).

Epilogue

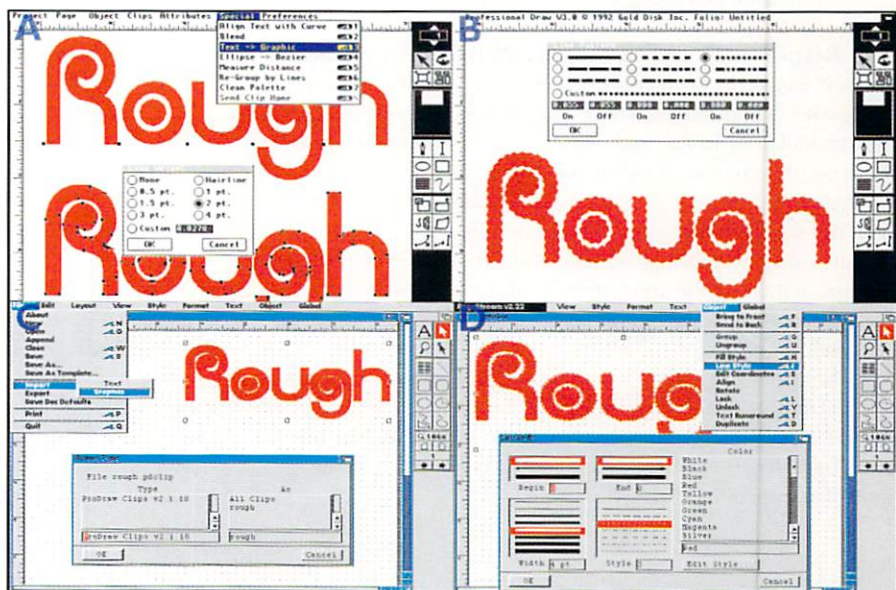
I apologize to those readers who were looking for another AREXX script this month, but this time was unfortunately spent on close examination of Commodore's dire situation. Hopefully by the time you read this, something substantial will have happened. But for now the latest rumor is that a majority of Amiga's engineers took up employment with Scala. Hmm, boy do I hate rumors. Until next month, have fun with the coolest machine ever made...

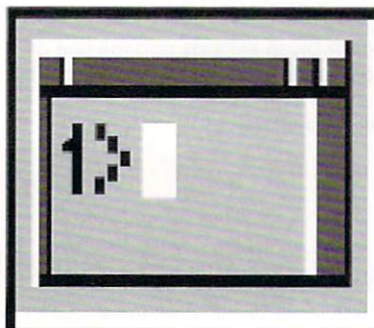
•AC•

Please Write to:
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P.O. Box 2140
Fall River, MA 02722-2140

FunWithText_5

To add a rough edge to your text or other objects in ProDraw, convert the text to an editable object and increase the Line Weight (A). Now simply change the Line Pattern to one of the dashed lines (B). This ProDraw clip can then be imported into Pagestream for further adjustments if necessary (C) & (D).





cli by Keith Cameron directory

NewShell Revisited

Several columns ago, I wrote about how to customize the Shell window. I explained some difficulties I had and how I had gotten around those difficulties. Since then, several readers have written in to share some of their tricks in customizing the Shell window. I would like to share these at this time.

Randy Teune of Virginia wrote in with one suggestion for resizing the Shell window at startup. If you recall, I wanted the Shell window to fill the screen when I opened it, rather than opening to a window a third the size of the screen. Here is how Randy handled the problem.

First, make a copy of the Shell icon. The easiest way to do this is from the Shell. You will need to rename it (I named mine ShellTest), so here is what you would type at the prompt:

```
COPY Shell.info Shelltest.info <RETURN>
```

Next, select the new icon from the Workbench; remember that "select" means to click on the icon only once. After selecting it, go to the "ICONS" menu and select "Information." Next, change the default tool to "C:IconX" and delete any tool types that exist. If you have never been in this tool window before, this may appear confusing. However, once you are actually looking at the window, you will see that all of this is very clearly labeled. While in the "Information" window, go ahead and click on the "Executable" and "Script" buttons in the upper right-hand corner. This will enable you to execute your new script file from either the Workbench or the Shell.

Now you will need to create two script files. You can easily use ED for this, but any text editor will do just fine. The first script file will have the same name as the icon, so mine would be called ShellTest. Here is what Randy suggests that you enter. By the way, put all of it on a single line.

```
run >NIL: c:NEWSHELL WINDOW:NEWCON:0/0/640/190/  
ShellTest FROM  
ShellTest-Start
```

Some of you may experience problems with this. If so, you can make slight changes, such as changing NEWCON to CON. This script, of course, sets the size and name your new Shell window will have.

The second script file you will create is referred to in the final words of the above script: ShellTest-Start. Here is what Randy suggests you type here:

```
Prompt "%N.%S> "  
Execute Aliases  
path reset  
execute Paths  
cd dh2:print  
run dh2:lc/c/lse test.c  
run >NIL: clock DIGITAL2=1,190 12HOUR SECONDS
```

This file is used to customize more personally Randy's Shell. The "aliases" and "paths" referred to above are actually two other scripts that Randy uses, so you would omit these from your script. The final line of the script starts a digital clock that will run at the bottom of Randy's window, so you could omit this line. You could also delete any or all of the other lines. The first line, of course, establishes what your prompt will look like. I discussed how this command is used in my original column on this subject. Some

prompt suggestions, by the way, will soon follow, and you may want to try some of them in your script.

Gene Edwards out in California has an easy way of dealing with the situation. First, enter the NewShell line to set your dimensions (you could use the ShellTest file line above, minus the "From ShellTest-Start") in a script file. He suggests you save this script file to your `s' directory and set the script bit using the PROTECT command. Now you can execute the new window using the "Execute" command from the Workbench or by using the Shell. Of course, if you want other types of customization (different prompt, etc.) you need to set those up in a different file, as Randy did. Hugh DeWitt of Maine wrote in with a similar solution.

Since we are dealing with the Shell in this column, I'd like to end by forwarding some ideas about the Shell prompt sent to me by

Of course, if you want other types of customization (different prompt, etc.) you need to set those up in a different file...

Douglas Nelson of Nebraska, henceforth to be known as "The Prompt Man." Douglas has discovered some interesting things about the prompt.

First, type this in at your Shell prompt:

```
PROMPT "%n.%s>Ctrl-N" <RETURN>
```

Of course, where I have "Ctrl-N" you will have a single entry (hold down the control key while you hit the N key). When you type anything in at the prompt, it will appear in foreign characters. You can still execute commands, for only the screen output is different. To return to normal, simply type PROMPT at the prompt and hit enter.

Douglas has also learned how to get a prompt consisting only of time. Normally, both the date and the time would appear. To do so, you need to type this:

```
PROMPT "%*echo %****date****>*len 10*"
```

When you execute this line, you will have a prompt consisting only of the current time. Of course, you need an internal clock for this to work effectively. Otherwise, you would have to set the time whenever you booted.

Finally, Douglas suggests a way to create a line feed after the prompt. Here is how it is done:

```
PROMPT "%n.%s*n"
```

Once you have this prompt, you will type in your command line on the next line. It is a nice change, I must admit. Don't ask me to explain why or how these tricks work. Douglas explained things to me, but I don't have enough smarts to compress the information briefly; I'd have to reprint Douglas's letter word for word. Thanks again, Douglas.

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I enjoy hearing what other people are doing out there. Please continue sending in your suggestions and scripts. I would ask, though, that when sending anything in, please try to keep it generic. In other words, try to provide information in such a way that it would work for any Amiga user on any Amiga computer. I have received several scripts that are used to run specific programs, and those are hard for me to interpret (remember, my elevator doesn't go all the way to the top floor anymore).

One topic I'd like to hear suggestions for is a comparison of MS-DOS and AmigaDOS machines. I use both rather extensively. At home, I tend to use my Amiga more, but at work, I am forced to use an IBM more. I really do enjoy both machines and I like the challenge of trying to be proficient on both. However, I often find myself using MS-DOS syntax in my Amiga Shell and vice-versa. Is there anything about the MS-DOS command line that is preferable to the Amiga Shell? What do you like better about the Amiga Shell. This should make an interesting column. And if the powers that be happen to read it, perhaps some changes will be forthcoming that would make the Amiga even better than ever. Let me hear from you!

•AC•

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bug bytes

by John Steiner

tips

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Ishar II AGA Revisited

Brian J. Bartlett sent EMail with a few tips for readers regarding the June, 1994 Bug Bytes. He writes, *For Pete, no last name, concerning Ishar II AGA: Frequently, you need to make sure that any fonts and special files, contained in the floppy c:, devs:, l:, and libs: directories, to your hard disk. Fonts are the key, usually, since that's the usual problem with many manually installed games. One caution however, do not just do a blanket copy of the files contained in the c:, etc., directories. You may overwrite your system copies with incompatible versions. For Jeffrey Powell, concerning Frontier: Turn off any screen blankers you may have running. Some people have problems with them running while playing Frontier.*

ARexx and Mathieeedoubbas.lib

Mr. Bartlett continues, *For Jeff Harris, mathieeedoubbas.library and ARexx: I can't help with the problem directly. However, William Hawes is online at CompuServe regularly and can be contacted at 72230,267 (or 72230.267@compuserve.com via Internet (note the periods)). He is currently surveying registered users to determine if another update should be done. More on Rexxmast follows.*

Amiga Print Problems With Okidata Printers

William Merritt sent EMail regarding printing problems with his Amiga 1200. He writes, *I am having trouble getting my Okidata 184 Microline Turbo Printer to print properly with Final Copy on my A1200HD. I am using the only Driver that appears to work, the OKI_92 Driver. The Problem is, that after every 6 lines or so, The Printer puts a big blank space through the characters on that line. Can you Help?*

This problem definitely is related to the print driver you are currently using. In fact, I have noticed that Okidata printers seem to be troublesome when it comes to finding compatible drivers. The exceptions to this are the Okidata 24 pin printers which seem to work fine when using the Epson LQ driver, and the Okidata laser printers which work fine when using HP Laserjet drivers. Any comments for Mr. Merritt?

Chip RAM and the A600

Donald Jones sent EMail regarding the A600 and chip RAM. He writes, *On all Amigas save the A3000 and, I think, 4000, chip RAM is limited to 1MB (on the above systems its 2MB) However, I have an Amiga*

600 with 2MB CHIP RAM, expandable to 3MB. I know it's chip because WorkBench says so on its memory usage. Also, I ran two programs requiring 1 MB chip RAM simultaneously. I think that needs some explanation especially since the A600 is a low-end Amiga.

SetPatch Tips

Dale Larson sent EMail regarding the mention of the SetPatch utility in the July 1994 Bug Bytes. He notes, *Commodore occasionally makes available new versions of the SetPatch program. This program is executed in the standard startup-sequence and fixes bugs in the operating system. Hence, having the latest SetPatch is a Good Thing.*

Unfortunately, there has been some confusion over which SetPatch to use with which machine. Here is the story. 2.04 (v37) users must use a v37 SetPatch. This is because the display database and monitor files in v37 are full of problems, and the v37 SetPatch is very specific to those problems.

The monitor files are fixed in 2.1 and up. Hence, 2.1 users (those who have a 2.04 or 2.05 ROM and the 2.1 workbench disks installed) can use a v38 or higher SetPatch. The v39 and v40 SetPatches will work with 2.1, while the v37 SetPatch will not. As of this writing, the most recent SetPatches that Commodore has released to the nets are 40.14 and 37.38.

Therefore, if you have 2.1 or better, get the most recent SetPatch you can find (40.14 or higher), and if you are still using 2.04, either upgrade to 2.1, or use the latest v37 SetPatch you can find (37.38 or higher).

More on Mathieeedoubbas.lib

Maxwell Daymon writes regarding several items in the June 1994 Bug Bytes, regarding mathieeedoubbas.library He writes,

Using Kickstart 39.106 (3.0) and Workbench 39.29 (3.0) the machine definitely crashes when trying to get the version of mathieeedoubbas.library after loading Rexxmast. The problem is NOT "obviously" RexxMast as newer releases of 3.0 don't seem to have this problem, and replacing the version command that comes with 39.29 with the one released with OS 2.1 works well (no crashes). In fact, I've had a number of problems with the OS 3.0 (39.29) "version" command which leads me to believe that it is not properly reading opened libraries correctly. I always have RexxMast running and have NEVER had a single problem getting a version of a library it's using with a newer or older version command. The offending command is "version 39.4 (27.8.92)". Replace it with "version 38.4 (4.3.92)" and everything should work fine.

Workbench 3.0 Monitor Drivers

Regarding Alternate DBL(NTSC/PAL) monitor drivers, Mr. Daymon notes, *Some of the OS 3.0 drivers do not have good screen positioning on some monitors. There are a few ways to solve this. MonEd3.x will allow you to tweak the values and save them for future use, and the new version of "Overscan" preferences editor from Aminet will not only allow you to position the screen within the overscan area, but also allows you to position the overscan area itself.*

Final Writer Memory Suggestion

John Morris sent EMail regarding Barlow Soper's questions regarding Final Writer mentioned in the June 1994 Bug Bytes. Mr. Morris writes,

When I first upgraded from Final Copy to Final Writer, I found several instances in which parts of pages or sometimes whole pages would come out blank. The problem was that I didn't have enough RAM (3 MB A1200) for the computer to generate the graphics data to send to the printer. Final Writer never complained about not having enough RAM, it just printed blank when it came to it's limit. The problem went away when I added 4 MB of fast RAM, along with an '030 accelerator.

A1960 Monitor Support

Gregg Baldwin of Seattle, WA sent EMail with a response to Robert Austin's question on 1960 monitor support in the June 1994 Bug Bytes. He writes,

In response to the question by Robert Austin about 1960 monitors I have found this: I too had the same troubles with my monitor drivers. All of my low syncing modes (PAL/NTSC/Euro36) tended to be on one side of the screen, while higher ones (DBI/Multiscan/Euro72) tended to be on the other. The Overscan program did not help much, as there was always a large black area on the side of the display, and anything in overscan was cut off.

I found that the new drivers that are for use with the 1942 monitors work with the 1960 monitor as well. Not only are they cleaned up a little, but the package includes a new Overscan program that works just like the older version, but also includes the ability to shift the screen to fit correctly within the 1960's limits. Use this to align the edges with that of the NTSC/PAL screen mode so that you do not have to use the "H.Phase" controls anymore.

On a side note, the Super72 mode does not fit well on a 1960. There are huge black borders on the top, bottom, and left side. Only manual adjustments can fix this normally, but there is a way to get around this. There is a program called "MonEd" by Raul Sobon that is available that lets you adjust your settings. This will help you adjust it to fill your entire monitor. There is a bug however, in that you must place your Super72 driver in your WBStartup drawer if you adjust specific aspects of your monitor (the ones you need to get the Super72 to work right require you to do this).

More Problems With 80000003 Errors

Harry Miktarian of San Francisco, CA writes regarding his experience with WB 2.1 and the A1000. He writes,

I thought I was the only Amiga 1000 owner who was experiencing WB 2.1 problems. I, like Eric Meyers in your April 94 issue, also have a major problem with 80000003 errors.

My Amiga 1000 has an Insider II board with 1.5 MB, a Kickstart with 2.05 ROM, and an AdSpeed board. I boot from a 52 MB hard drive in my DataFlyer 1000 chassis. I have grounded my Pal chips to the mother board ground and have a wire running from the C31 to pin 7 on the f02, I also have a +5v source to pin 49 on the CPU socket to eliminate power and grounding problems in the 1000.

As told by AC Tech #3.4 and Amiga World Aug. '93...

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I have done all these modifications because I thought this might be the culprit of my random 80000003 errors, no such luck. I seem only to get these errors when trying to print from Pagestream 2.2 or when using Proper Grammar II. Software that I use that does work perfectly is ProWrite 3.3, OctaMed, SuperBase 2, AMOS, and numerous PD tools and applications. When I try to print from Pagestream, the system crashes with the above error. It will occasionally work if I use the lowest dot pitch in Epson Q mode (I normally use Cannon drivers). This seems to have gotten worse when I added the hard drive and/or some of the above modifications. It has always guru'ed (at least 80% of the time I've tried to print. Soft-Logik has tried their best but also seemed baffled. Proper Grammar II gets the 80000003 guru about halfway through any paper. First the screen goes gray, then I have to reboot and this is when the error appears (Pagestream's screen goes black and then gives the error or sometimes does the above mentioned gray thing).

A1000 and 14.4 KB Modem Problem Revisited

Harry Miktarian also sent EMail regarding Greg Suire's modem problems mentioned in the July 1994 Bug Bytes.

Concerning Mr. Suire's problem with getting his 14.4 Zoom modem to work on his Amiga 1000. I am now running a SupraFax modem 14.4 with no problems. I say "now" because I blew my first Supra by trying to use a gender switcher instead of a dedicated A1000 cable. I do not know what the pin outs are on the Zoom but if it by chance is getting the +12v on the wrong line "POW." He did not mention what sort of cable he was using or what sort of processor he is running (a 68000 might not be fast enough for 14.4). I suggest getting a A1000 serial cable from Redmond and testing his modem to make sure it wasn't damaged (the flashing MR light does not sound good). I wish him luck!

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The Video Works

along with the other chips.) I have tried booting WB 1.2 from the 2.05 ROM (hoping that the lesser command set will make a difference) and have had minimal success.

I have run some tests taking out the 2091 card and booting from floppy. Everything seems to run well except for an occasional guru that pops up every now and then (no closer than one hour intervals). Of course it is kind of hard to run programs on an A2000 with only one floppy and 1 MB of RAM. I have also had a chance to plug the 2091 into an A4000/030. The entire card (RAM and hard disk) seemed to work just fine (it wasn't in that long; the A4000 test seems to contradict the idea of a bad 2091, though). I remind you that the 209x series was created for A2000's and A2500's. The design was later integrated into the A3000 motherboard.

I have found a mail order company that sells A3000 components. I have ordered a new power supply, a new daughterboard, and a refurbished motherboard. If you know of any good burn-in software programs for the A3000, please let me know.

John Kellner of Pt. Placencia, Belize, Central America, wrote with a question about his A3000 and Workbench 1.3 boot problems. He writes,

I have an early model A3000, 25 MHz, 50 MB that came with Sys. 2.0 and since updated to 2.04. I have A-Max II, A2386 and PC SVGA graphics boards installed. I have 14 MB of RAM and 2 MB Chip memory. I recently replaced the hard drive with a 240 MB Quantum drive. In doing so I copied all my WB_2.x partition from the old drive to a Syquest cartridge to copy onto the new hard drive but unfortunately did not copy the WB_1.x partition.

Everything works fine except I can no longer cold boot to Sys. 1.3 from the hard drive as before I changed drives. I created the WB_1.x partition giving it a boot priority of 0 as recommended and copied all the files from my 1.3 boot disk. The boot disk works fine.

When I cold boot with both right and left mouse buttons down the screen comes up with the choice as before and the 1.3 hard drive button is not shadowed out. However when I click on the 1.3 hard drive button I always receive the message "Error reading 1.3 Kickstart file! Reboot system." No matter how many times I have updated the Kickstart in Sys. 2.04, it makes no difference.

You are either missing the Kickstart 1.3 file, or it's damaged. The Workbench 1.3 operating system, like WB 2.x requires a Kickstart file. You will find the 1.3 Kickstart file on your 1.3 system disks that came with the A3000. Reinstalling WB 1.3 using the supplied system disks should restore WB 1.3 operation.

That's all for this month. If you have any workarounds or bugs to report, or if you know of any upgrades to commercial software, you may notify me by writing to:

John Steiner
c/o Amazing Computing
Box 2140
Fall River, MA 02722

...or leave EMail to
John Steiner on Portal
73075,1735 on CompuServe
Internet mail can be sent to
John_Steiner@cup.portal.com
FAX John Steiner at (701)280-0764
(8:30 A.M. to 5:30 P.M. Central time, Monday-Friday)

Bill Bohnenberger also sent EMail with a comment on Mr. Suire's modem problem.

It has been my experience that high-speed modems must have high-quality cables in order to work properly. I suggest that Greg Suire gets a cable from the modem manufacturer if he wants to save himself a lot of grief. After going through this once myself, I never buy made-in-the-third world modem cables. The few extra bucks are well spent.

More A3000 Questions

Brett Johnson sent a follow-up EMail letter regarding his A3000 system. He writes,

I would like to extend my appreciation about the printing of my letter about my A3000 problems and the problems with my 2091 in the July 1994 issue. In the time that has elapsed between the first letter I sent and the July '94 publishing, I have upgraded a little bit (but am still having the same problems). I have upgraded the A3000 2.04 OS that was installed on my hard disk (running on the A2000) to 2.1 designed for all Amigas. I have changed the 6.6 boot ROM's on the 2091 to version 7.0. I have also called the company that I bought the 2.05 Kickstart from wondering if that chip had anything to do with it. They assured me that an A2000 revision 4.2 motherboard could handle the new Kickstart (although they might have gotten this information from the now dying Commodore).

I checked for a fuse on the A3000 serial port as described in Amazing Computing, July 1994, page 29, second column, fourth paragraph from the "Kickstart 2.05 ROMs and Early A500s" title. I could not find one on my revision 9/01 motherboard. When the repair man plugged in a good power supply, he said all of the chips did get hot. (I am now questioning his judgment for not pulling my 8 MB of fast RAM and extra megabyte of chip RAM before plugging in the power supply (they are all dead now

•AC•

Dragonworld

Computer-Generated-Images
On A Shoestring

by Les Paul Robley



Science fiction writer Arthur C. Clarke has been fairly on the money anticipating certain future developments in his stories. None could probably affect the film community more than his "think movies," dream-like film scenarios created by a person hooked to a home computer terminal. Who would have thought that even a glimmer of it might surface before the year 2001?

Some effects artists could see the writing on the wall after watching the tentacle from "The Abyss" rear its watery head out of that 1989 James Cameron film. Some even feared that traditional full-size creatures would be things of the past, especially after hearing Steven Spielberg remark concerning "Jurassic Park," that if he'd known computer-generated images (CGI) looked as good as they did, he would never have had the large-scale models built.

CGI is becoming faster and more economical by the day. Producers can now afford to make effects shows at a price that

won't break studios' budgets. As filmmakers approach the threshold deciding whether it's cheaper to have a model constructed or a computer graphic accomplished, when all the below-the-line costs equal the price of a computer scan and the rendering looks just as real, one can guess which way the decision will fall.

Thus far, film-quality CGI has been priced out of the reach of most low-budget producers. Either it was prohibited to expensive Silicon Graphics (SGI) platforms, or relegated to the realm of video and television productions. But, as computer prices continue to plummet and chips become more powerful, more and more filmmakers will be able to sample the goods without blazing a trail to the poor house. Now, more digital film recording houses have made themselves available as third-party service bureaus, aggressively marketing their scanning/recording services, so prices are dropping. Companies like Dream Quest's Motion Pixel, Pacific



Title Digital, RGB Laboratories and Optical Cinema Service at one time relied on proprietary file formats which made it difficult for low-end computer users to employ. Now they accommodate several of the most popular file formats, such as PICT, which anyone using SGI to Macintosh to Amiga can utilize and make economically feasible.

Paul Gentry, visual effects supervisor and DP at VFX Digital (Full Moon Entertainment's digital right arm), realized early on that to produce science fiction and fantasy films economically, they must resort to an in-house computer work station for CGI and digital compositing. "The reason we set up this department is because we do so many genre films here and we have so many effects shots," he said. "For years the houses around town have charged such a premium for blue screen. I'm trying to make blue screen look like a nothing, a minimal expense. Also, I want to obtain control of the shots right under the auspices of the effects supervisors and directors who work here who won't have to make time-wasting trips to the local effects house checking on shots. The idea is to turn out more shots for the same kind of money than just a few blue screens. We can now do another fifty percent more shots since we're doing them in-house and we're not worried about a profit margin or overhead."

Unlike other low-budget CGI companies, Full Moon is trying to accomplish everything at film resolution. Even though most of their releases are direct-to-video, they are trying to anticipate new technologies, such as HDTV. That way, no matter what format comes out in the future, their effects will look decent. Also, a new film, "Shrunken Heads," is one of the first releases the company has produced theatrically in a long time. By compositing with a high resolution of 1-1/2K x 2K, Full Moon's special effects will, hopefully, not look inferior when judged next to a normal live-action 3K x 4K 35mm film resolution image. The only other alternative would be to composite in video resolution and up-res the image from 525 to 2000 lines with services such as Digital Magic's Vision Magic or CIS E-FILM system process, but the result is not comparable in look to 1.5 X 2K originating scans.

The equipment Full Moon uses in its two computer work stations and one rendering station is bare bones at best, but has been more than adequate to perform some eye-popping effects. With an investment of \$50,000, the hardware consists of five Amiga 4000s utilizing the advanced AGA chip set with Motorola 68040 processors and Video Toaster 3.0 software (NewTek has since released a new 3.1 version); three Quadra 950 Macintosh computers equipped with 80 megabytes of RAM (the renderer contains 256MB RAM); two Exabyte EXB-8500 tape drives; five 3.4GB hard drives; small standard SyQuest 88MB removable drives as an easy way to quickly transfer large files; one 1.3GB magnetic-optical erasable disk machine which has the advantage over a SyQuest drive in that one can transfer much more data on a disk—525MB per side; two WaCom UD1212 Graphics tablets for digitizing flat artwork; an Epson and Nikon scanner to transfer up to 2700 DPI 35mm 8-perf slides and negatives for quick transfers that sometimes negate the need for shooting and transferring expensive static background plates; and three Panasonic Panasync C1795e monitors.

For CGI software Full Moon relies primarily on LightWave 3D with its enhanced features for the Video Toaster 4000. It has the ability to render and display animations directly from the Toaster Switcher in full-screen 30 frames per second real-time playback with 256,000 simultaneous colors, allowing six full seconds with only 16MB of fast 32-bit RAM. In addition, the rendering speed increases by factors of ten to twenty times over the older Toaster with improved image quality due to new anti-aliasing routines that automatically locate and smooth jagged edges. Partial screen animations can easily be keyed over live video using alpha channel drop shadows. There are also cards like the RAPTOR that can enable the Toaster to render at blistering speeds, but at a cost of around \$15,000.

Most Full Moon effects shots requiring one element of CGI or digital compositing take approximately one week per shot at a cost of \$2,500 to \$3,500 each. Some of their first composites took a little longer due to an initial learning curve. The more elements in a shot—such as the three Shrunken Heads flying around simulta-



Models (as seen on the left) and computer generated images (as above) were integrated seamlessly into the final production with live actors.

neously—demand three times the scanning cost for each blue screen element, plus three times the labor and time.

Full Moon began their digital odyssey in September '93 and in less than six months has established a full-fledged digital work station unit producing CGI and digital compositing just like the big boys. The major difference, however, is that they did it economically for their own in-house sci-fi entertainment.

Visual Effects Supervisor and stop-motion expert Randall William Cook did the design work and character animation for the six computer-generated flying dragon shots (comprising approximately 40 seconds) in Full Moon Entertainment's upcoming "Dragonworld." His background on such films as "The Gate 1 & 2" and "Ghostbusters" helped facilitate the crossover between the physical world of models and animating within the virtual context of the computer. In fact, CGI is more akin to cel animation in that the animator uses extreme frames, while the computer adds the in-betweens and performs all the necessary move calculations.

LightWave 3D for the Amiga was chosen for the job since the Video Toaster was the only low cost platform that could do what they needed for the money. The Amiga had already proven itself for video applications on the TV series "Babylon 5" and "seaQuest DSV," but unfortunately behaves like a sloth when it comes to achieving higher resolutions. Would it meet Full Moon's film quality requirement, since their video product is repeatedly shown to buyers on 35mm release prints?

"They used a lot of stop motion in the finished film, but for the flying sequences we wanted to try computer effects to see how the Amiga, specifically, would handle a complex living creature," Cook began. "Because we had to animate the characters organically and perform functions of character animation economically (given the fact that the pictures done here are low budget), I wanted to get a system that would allow for versatility in character animation. The demonstrations I saw of the [Amiga's] Bones feature encouraged me that at least for certain kinds of limited flight shots, we would be able to get what we needed." As it turned out, Cook was able to get a lot more than distant flight shots. He was able to get quite close.

The Bones feature in LightWave 3D allows users to create complex animation with little effort. Bones are akin to a puppeteer's marionette strings. Wherever the strings move, the puppet is sure to follow. In LightWave, wherever the bone moves, the object contorts itself to follow suit. The bone in this case is a small object pointer that exerts influence over an object's shape. For example, when you make the bone rotate, the object also twists around and rotates.

Like gravity, Bones can have unlimited influence on the object. Two factors dictate how much influence a bone can have: its size and range. The larger the bone, the more influence it has on an object next to it. According to Cook, the Bones feature does not match the convenience or versatility of a superior process known as "inverse kinematics."

"What you have is this very complex 3-D model with an under structure like a skeleton, or a stop-motion armature with ball and socket joints," he explained. "If you grab a wrist and move it up into position, the whole arm goes with it. But the elbow won't go past a certain point because you've set up parameters or move limits [with the Limited Range setting on the Bones menu]. Before, we had to move each element or bone a little bit at a time independently of each other. With inverse kinematics, you only have to move the last object in a given anatomical hierarchy."

However, Bones is not quite inverse kinematics. It proved to be not as well-developed as programs for the SGI, such as Alias or SoftImage. Due to some of the idiosyncrasies of the Bones technology, the ability to produce a completely convincing living, breathing 3-dimensional creature involved certain compromises.

"I think we were able to do with the Amiga certain bits of character animation of a complex and realistic creature, certain effects which were persuasive as far as they went, but the technology just doesn't go far enough to produce unlimited photo-realistic acting and totally naturalistic animals. Bones is very good, but very good isn't good enough for all character animation applications," Cook confessed.

Bones behave not really as bones, but more like magnets—gravitational attractors which distort a wire mesh rather than move



In the end it was almost impossible to distinguish which images were real and which were generated. The picture at the left was provided by the Paramount's public relations office where no one could say how it had been produced.

a solid sculpture. So, the control factor is limited. Imagine a bunch of little magnets that are actually pulling on the wire frames. The trouble with that is, if a pair gets too close together, they stretch out and try to touch one another like gravity, and this distorts the image.

Cook explained the magnetic attraction analogy even further: "To put one skull bone in the head of a creature that's as complicated as a dragon would not be the same as putting one armature block into an animated puppet, or putting a real skull into a real dragon's head. We found we needed a number of gravitational attractors around that main bone to keep the head from malforming as it moved. Also, all the different bones exerted gravitational attractions on one another in a way which limited the animation. When one body part would get too close to another body part, one would begin to distort toward the other through gravitational attraction. As a result, we found we had to limit the acting of the creature to the sort of motions which were compatible with these gravitational eccentricities. Hence, we compromised the pantomime and limited what we were able to achieve to conform to the restrictions of the Amiga LightWave technology."

First, a three-foot model of the full-grown dragon was made out of hard urethane in Mark Rappaport's Creature Shop. This was sent to Viewpoint Data Labs in Utah and digitized for the Amiga, then further customized by digital artist Michael F. Hoover, a Video Toaster expert. Even though "Dragonworld" was intended for a direct-to-video release, Cook used Amiga's film resolution of 960 x 1530 and re-sized or re-interpolated the pixels in Photoshop to 1536 x 2048.

The Video Toaster manual claims it offers adjustable resolutions up to 3072 x 1920. If one anti-aliased that, it could provide a synthetic resolution of 16K by 12K. But it is not a true 24-bit display device. It internally supports a 16-million-color palette, but outputs color and resolution to the limited NTSC composite video signal. Unfortunately, nobody in Hollywood uses composite video as a broadcast source. To display true 24-bit images for recording onto tape formats like D2, it is possible to extract the digital quality image from the Toaster by out putting the LightWave animations through hi-res 24-bit cards, such as those available from Digital Micronics (Vivid 24 for \$3,000), GVP (EGS-110/24 from \$2,500), and the less expensive products from INOVAtronics (AV24) and Centaur (OpalVision) for under \$1,000.

"We put more than one hundred bones in this dragon," Cook said. "I'd done quite a bit of animation on the Macintosh with Macromind 3D, and used various graphics programs like Painter. I nevertheless found that what we were doing with the Amiga was

all new. We bought machines at the end of September '93 and did our last shot at the middle of March, so it was pretty labor and learning intensive.

"Instead of animating shots per se, we animated actions that would cover a sequence. The first shot we animated took a couple of weeks because I was unfamiliar with the program. It took two weeks for a 388-frame shot of the dragon flying. Micheal Hoover's modification of the character was an on-going process and many of our duties overlapped. For example, the creature's maps were still being created while I was animating it."

After the dragon was animated by Cook, it was composited in the Video Toaster and then transferred to Macintosh image files by Hoover using ToasterLink. He and Hoover were basically a two-man department. "Mike built people from standard issue animation digital dummies and gave them wigs and clothing to which I applied Bones. I changed their faces a little bit so they looked like the people. Then we actually mapped photographs of the actors' clothing and faces onto the people the way we did with the dragon."

It took on the average of one-and-a-half weeks to animate a 300-frame sequence. For the scene when the dragon rears up to fly away, the background consisted of a daytime photograph of a Romanian village, adjusted by Hoover to look like night in Photoshop. This background was imported into LightWave with a slight tilt upward to add some parallax shift as the dragon lifted off the ground.

This one shot is probably the most representative of the computer's main advantage over traditional stop-motion animation. A superb sense of immensity or massiveness is captured that is very difficult to achieve with small stop-motion models. Ray Harryhausen managed to capture this awesomeness with the Kraken in "Clash of the Titans," but only because the model was a good five-feet tall.

"Since this is something the computer handles well and stop-motion has a little trouble with, it seemed a good idea to accentuate the benefits of the computer and do something that was more majestic and ponderous than you'd want to do in stop-motion," said Cook. "In 'The Gate' I had a great big Demon Lord character which was all stop-motion and again we attempted to move it with an elegance and regality befitting a grand creature like that. In so doing, I spent a lot of time with the teeny-incremental movements. The computer, of course, allows you to do it with greater ease.

"The Amiga is wonderful for certain things, but it's still not SGI as far as its ability to make a totally convincing creature. That being said we were very happy with the level of photo-realism we were able to obtain and the ease of compositing which the Amiga gave us. Those features were very valuable and it's a very versatile tool which I wouldn't hesitate to use for simpler applications. However, for a more complicated character, I feel that it was somewhat inadequate."

Many of Senior Visual Effects Supervisor David Allen's shots for Full Moon involve the digital compositing of rod puppet creatures into already photographed background plates. For "Prehysteria 2" there is a shot of a baby chasmosaurus running across a highly reflective museum floor. The puppet was actually animated to run in place by four puppeteers using slots cut into a

piece of reflective mylar in front of a blue screen. The mylar acted as a mirror to reflect the blue under the puppet. The rods were painted the same blue color as the background screen, and thus became as neutral as the background blue. A motion-controlled diagonal camera move I added gave the effect of the puppet running across the frame. The model was composited into the shot using Photoshop and COSA AfterEffects. Its reflection on the marble floor was achieved by flopping the image, adding distortion, then repositioning it at an oblique angle beneath the running puppet.

Effects supervisor Chris Endicott oversaw a similar effect of a tiny pterodactyl flying through the doorway of a greenhouse. A simple split screen matte of the door was created in Photoshop as the creature disappeared behind the wood. Often when a camera move is not possible to give an apparent motion to a creature, the puppet is shot full-frame running in place to obtain the best possible resolution. The model is then taken into COSA AfterEffects and a digital ADO moves it across the screen, adding motion blur, as was the case with the baby dragon scurrying through the forest in "Dragonworld." For "Oblivion 1 & 2," various shots of a spaceship landing in the desert were filmed via motion control by effects supervisor Joe Grossberg and programmer Les Paul Robley. These were digitally composited using the techniques previously discussed.

Full Moon Entertainment's VFX Digital department is not above using traditional opticals when the need presents itself. For the film "Dark Angel," Gentry and I superimposed a 45-inch diameter glowing Plexiglass sphere over shots of the angel floating around her parents' room. This effect was patterned after the Glynda, the Good Witch optical from the 1939 version of "The Wizard of Oz," but aligned in the camera using today's technology. A videotape of the pre-existing footage striped with time code was re-positioned to fill the Fries camera videotape ground-glass markings using the Panasonic MX-50 frame grabber and digital-shrink button. The tape was then synced to the motion-control rig by means of the time-code-trigger start switch built into the Kuper RTMC software. This enabled the cast and crew to witness the finished composite after each take on video, engaging the MX-50's luminance key capability. The stage had been previously draped with black Duvateen to negate the need for any garbage matting by the optical company doing the composite. Gentry wanted to make it as easy as possible for the technician performing the optical. Gentry felt that this simple superimposition technique was the best, least expensive and easiest method for achieving this particular effect in the film.

"Simple split screens and some double exposures are always required and the turn around time is still cheaper and faster with opticals," he admitted. "The big bugaboo with digital composites is 'shot length.' As far as blue screen shots are concerned, I'd rather do them digitally. But long takes and shot elements requiring intricate fog/diffusion effects are still cheaper to do on an optical printer. The image loss in a good optical is practically imperceptible. Digital still has to work hard to look as good, image-fidelity-wise." He believes that motion-controlled models and opticals are not obsolete. There can be a symbiosis with CGI in the future, compositing traditional effects digitally inside the computer. "I think a lot of people felt cheated that after we got these great computer compositing machines, there would hopefully be a period of time when we'd get to use these tools solely to composite digitally. But CGI has come along about as rapidly almost eliminating the need for models or miniatures, and probably people next, but it's not totally economical yet."

Digital designer Chris Biggs doesn't care which computer platform he works on, as long as it gets the job done. "Basically we use Macintosh because we started off with a lot of Mac hardware and software and don't want to invest in another format, especially since we are at a crossroads with computers right now. The IBM PC also has some good, sophisticated low-end graphics software. But the future's about to change in a big way and we don't want to invest in the wrong thing.

"The next generation of computers won't have a keyboard. You'll talk to them and they'll talk back to you. Instead of physically typing in something you'll just speak the words, and instead of having a mouse, you'll just use your finger and point. Just like in 'Star Trek,' they have voice recognition now, but you must say the word over and over again using the same inflection."

Biggs demonstrated a slide show of a new program called 14 BRYCE whereby the computer creates 3-D landscapes and environments right in its own artificial universe. The neat thing about Bryce is one doesn't have to be a skilled artist to use it. He indicated that it was acquired and further developed by Kai Krause, the maker of KPT software (Kai's Power Tools). Krause interfaced the algorithmic generator to work on a Macintosh computer which manufactures environments on a digital level, akin to the Genesis Experiment CGI in "Star Trek II and III."

"All you do is set parameters, telling the program how much you want of this and that, what color scheme to work with, and it does the rest. You can use real every day images to create fantastic artwork (such as a photograph of a person), but because you're using highlights and shadows it creates weird environments. There are no pre-existing models or images, you just tell it what textures you want, colors, elevations, sun angle, ambient light level, rock formations, snow, water, cloud movement, etc. It'll probably sell for only \$100 and be out by the time you read this. It'll put a lot of matte painters in a major hurt. But any software graphics program will still need artists to run them, not techno-brats."

A similar program for the Amiga put out by Virtual Reality Laboratories is called Vistapro 3.0. It allows the user to accurately recreate, explore and animate real places in vivid detail. Based on real-world data obtained from the U.S. Geological Survey and NASA spacecraft, Vistapro offers nineteen landscapes—from the Alps to the surface of Mars. According to a company spokesperson, special effects houses are already exploring uses of this program in their films.

Just because Full Moon uses low-end gear, doesn't mean Gentry wouldn't like to employ the more expensive digital toys. "I'd be a fool if I didn't say I wouldn't love to have SGI Onyx's galore and plenty of FLAME, SOFTIMAGE, FLINT, MATADOR, whatever, to work with," he concluded. "But it works against my low-budget approach for Full Moon, a company which needs to watch the bottom line very closely. The price we pay is not being exactly state of the art, but the tools available to do this stuff inexpensively are here now. We're just driving digital Volkswagen Bugs while others are driving Ferraris. We both still get to where we want to go."

•AC•

Please Write to:
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c/o Amazing Computing
P.O. Box 2140
Fall River, MA 02722-2140



Feedback

Letters to the Editor

Amiga Technology in the Public Domain? Amiga Spreadsheets—Please. CD32 worldwide compatibility problems.

Dear AC,

The often expressed hope for a corporate "white knight", such as Phillips, Sony or Samsung, to purchase Amiga technology and save the computer is self delusion. A large corporation would have little to gain, and much to lose, by competing with IBM and Apple.

A likely scenario would be for the successor corporation to employ the technology more conservatively, such as in a video game machine (CD32 by Samsung?) or in a card to be used by a Macintosh or IBM. The Amiga as a separate computer system would be extinct.

It is not widely appreciated that the reason why the IBM computer is dominant in the world is because IBM failed to adequately patent the basic technology for their machine. This created the market for clones, and these machines became more available, powerful, and cheaper as thousands of manufacturers competed with one another.

Commodore would best serve the Amiga, and their customers, by licensing Amiga DOS and the Amiga technology for a nominal fee, or by placing it in the public domain. This would encourage lean, hungry entrepreneurs to develop and market the Amiga, perhaps duplicating the success of the IBM clones.

Sincerely,

Jeffrey T Powell
West Covina, CA

You reasoning is very sound. Some bidders have expressed an interest in buying the Amiga technology and then utilizing only the portions they need for their business. However, other bidders have not only stated that they will do everything they can to win the Amiga technology in a bid, but, if they should lose to one of these other bidders, they are prepared to make an offer to the winning company for the technology to continue the Amiga line. Either way, the Amiga could continue.

The problem is time. If the Bahimian actions take too long, many of

the people who want to continue the Amiga feel it will be increasingly less attainable. The result is that the longer we wait for the Amiga production to resume, the less likely it will happen.

As far as the technology is concerned, it belongs to the creditors and not Commodore. Since this is their main asset available to them to realize a portion of their losses, they will want to sell it—not place it in the public domain.

Dear AC,

I'd like to comment on Jeffrey T Powell's letter which appeared under Feedback in April. Although I agree with him, I want to add that the Amiga doesn't lack all in the business sector. I have never felt as if I were missing a word processor. For DTP, PageStream is far above Aldus PageMaker and there are a few good databases. Indonesia is an IBM clone domain and few people know the Amiga. Friends are impressed with what they see and regret they can't have the same programs run on their machines.

What is missing is a decent spreadsheet. It is the only thing I am ashamed to show on my Amigas. To do decent spreadsheet work, I keep an otherwise superfluous IBM clone. Of course, the alternative is to install an IBM card. But why should I waste &800-900 and block one of my slots? I rather spend \$400 on a real spreadsheet!

For the first A1000 (in 1986) I had Professional, a Lotus clone. It never updated. I bought Platinum Works! with my A2000 in 1989. MSS never improved it. The only software which came near to a spreadsheet was Superplan which was way above the others in the graphics side and was unique in having a time sheet. Since Oxxi took over the Precision Software, they kept their excellent database but seem to do nothing about the spreadsheet. I wrote to them early this year suggesting an upgrade with at least some WYSIWYG but never got a response. Is it a case of No news is good news?

Last year, I purchased an A1200. The Singapore dealer

suggested ProCalc. I tried and almost cried. Imagine that you have to decide about fonts before starting. Changing fonts made some words disappear but they did print. The fonts used do not seem to be saved with the data. The printing range is not saved either. The printing options are practically nonexistent. Importing Lotus files did not always work and some files were not recognized. The commands are not standard. All good spreadsheets like Puattro Pro and Excel have a Lotus tree. Not ProCalc. Not Multiplan.

I stopped subscribing to another Amiga magazine because the then Editor-in-Chief wrote that the Amiga could do without a spreadsheet: the graphics obsession. Similarly, I shall buy nothing produced by Oxix unless they start thinking about the necessity of producing a spreadsheet.

Yours Sincerely,
Alex Wolvesperges
Sumut, Indonesia

Spreadsheets is definitely a place where the Amiga needs to improve. While there have been some attempts in this area, the business industry now demands better than what we are currently able to provide. I will pass your letter to the companies you have mentioned and to others who have shown an interest in a spreadsheet for the Amiga.

What is missing is a
decent spreadsheet. It is the
only thing I am ashamed to
show on my Amigas.

Dear AC,

What can we readers do to help promote the survival of the Amiga? I have been an Amiga enthusiast since 1987, then in 89 I bought my first A-500 and a few years later a CDTV. I have also bought and sold several A-600s to very satisfied customers. I did this because Walden Software was selling them for \$80 and I figured if they couldn't find a home for them then I would. I currently own a (40mhz) A-1200, CDTV, and a 1942 monitor. I also plan on buying a CD32 soon. So as you can see I've done my share of buying Commodore products, but it didn't seem to help much. I have even given Amigas as gifts and I can't tell you how many people I have persuaded to buy Amigas instead of other computers. Yes, I am a devout Amiga evangelist.

What I'm getting at here is that one person can't make much of a difference and with the status of the Amiga up in the air, that complicates matters more. If Samsung buys the rights to the Amiga though, then Amiga publications should get together and start some kind of advertisement fund. Hey if the Clintons can do it for their legal fees then why shouldn't the Amiga do it for its advertising costs. I'd donate.

This may not be the solution, but it seems like We the People of the Amiga Community should be able to do something collectively to aid the Amiga. I just don't want to see it fade into oblivion like the C-64 or something.

Sincerely,
Jeremy Lee Campbell
Rising Sun, MD

Our best hope is to wait to see who wins the Amiga technology and then support/nudge the company into creating the Amiga line and the Amiga awareness that we should have seen from the very first.

Dear AC,

First, I'd like to let you know that in the last several months it seems that your magazine has increased in quality many times. Specifically, more color!! Please keep it up, it definitely makes for a more pleasurable reading.

The next thing is that I agree 100% with Mr. Hicks when he wrote about Commodore being bought out and the Amiga surviving (Editorial/Volume9, No.6, June 1994). The first thing that came to mind was when Chrysler bought Jeep, they (Chrysler) didn't take the steering wheels and throw the rest of the company away!

Mainly though, I'm writing in regards to the CD32 and its compatibility worldwide. I live in Sicily, Italy and am soon moving close to Rome for about 3 years. I am a little confused with the way CD32 handles PAL and NTSC. If I were to buy a CD32 in Europe, would cd's produced for the US market work on my machine? or am I stuck with international mail order forever. I have never actually seen a CD32, does it have an external power source like a Nintendo? or is it internal? and if so, how hard would it be to switch over to 110-120V upon returning to the US? Lastly, what about the MPEG module, anything I should be concerned with there?

Thanks in advance for any help you can give me on this subject, and once again, keep up the good work.

Michael D Knoell
Catania, Sicily

P.S. I was reading the other day about an A1200/A4000 specific CD Rom drive that will be CD32 compatible, do you think Commodore or a third party developer will come out with a way to reverse that process, I.E. hook a CD32 to my A4000?

According to our information, CD32 NTSC and PAL are not switchable. If you own an NTSC machine you need NTSC software. We are unsure if the MPEG module is universal, please check with your dealer before you purchase it.

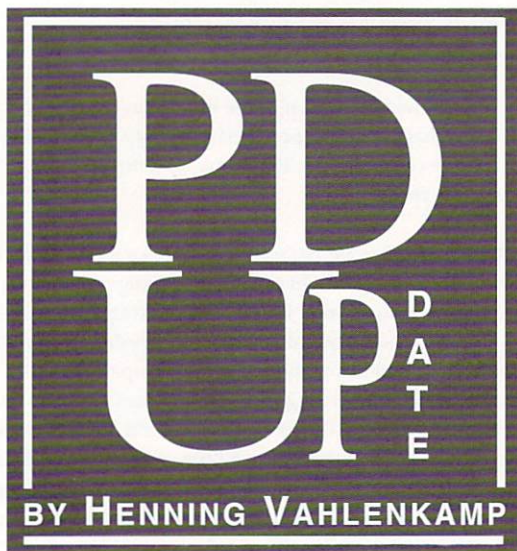
The Power supply is external and you will need a North American version.

As far as CD32 on A4000 or attaching a CD32 to an A4000, we will need to wait until there is once again an Amiga engineering division to create these products.

•AC•

**If you have a letter for
Feedback, send it to:**

**Feedback
c/o Amazing Computing
P.O. Box 2140
Fall River, MA 02722**



Last May's column (AC V9.5) focused on AGA games, so this month we'll take a look at several ECS games (no AGA enhancements). As always, PD Update seeks to find the best in Amiga freely distributable software.

The programs mentioned here are usually downloaded from Aminet ([ftp.wustl.edu/pub/aminet](ftp:wustl.edu/pub/aminet)) or FUNET (<ftp.funet.fi/pub/amiga>) on the Internet. They also should be available via various other sources such as online services (Portal, Delphi, etc.) or BBSs. Some of them eventually appear in the Fred Fish Collection too. Unless otherwise noted, they work with all Amigas and 1.3+.

DeliTracker 2.01

(shareware, \$20; 2.04+)

by Delirium Softdesign

Aminet: [/mus/play/DeliTracker2_01.lha](#)

With a unique, modular design, DeliTracker is probably the most powerful Amiga music player ever. It recognizes a whopping 58 music formats, notably Pro/Noise/SoundTracker MOD, IFF 8SVX and SMUS, MED and OctaMED, and WAV. Surprisingly, it handles 8, 16, and 32-voice PC soundcard formats too, although these will take their toll on slow CPUs. DeliTracker uses an external player file for each format, except for common MODs which have internal players. The program's modularity extends to its 15 genres - small utilities that do neat things like displaying music file information and real-time waveforms.

DeliTracker's main interface window is also modular. Any combination of its Info, Comment, Control, and Tapedeck sections can be displayed. The interface is altogether logical and professional, complete with lots of options and settings. Audiophiles will be pleased to note that they can create custom musical selections via module lists. Rounding out the package are an ARexx interface, Appicon/Appwindow capabilities, and AmigaDOS 3.0 support.

The extensive modularity both saves memory and makes it easy to add additional players and genres. But be aware that loading all the modules together easily consumes 1MB of RAM. Despite its vast format support, DeliTracker couldn't play "mod.startrek", one of my favorites. Don't let that deter you from checking out this wonderful program.

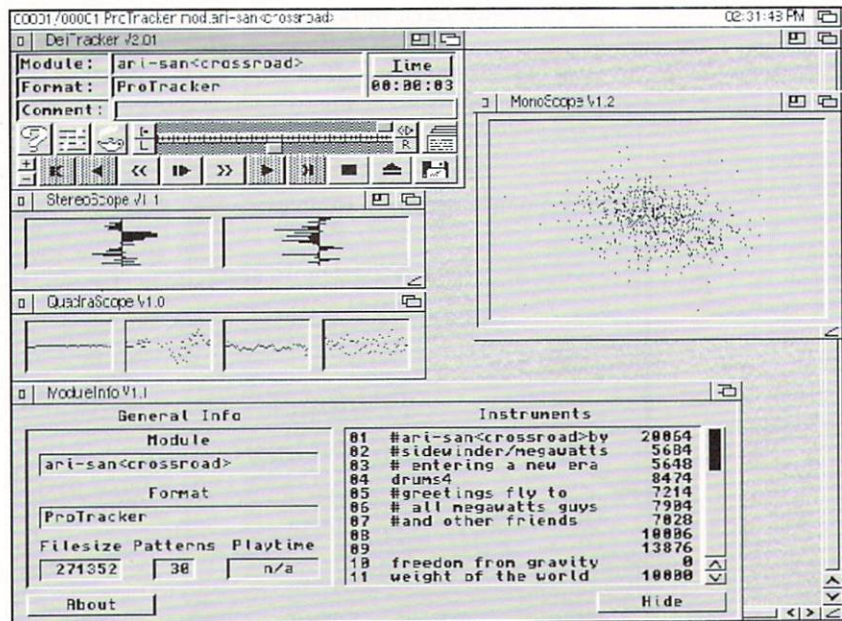
Imperial 2.0

(shareware, \$10; 2.04+)

by Jean-Marc Boursot

Aminet: [/game/think/Imperial.lha](#)

Of all the non-commercial Mah-Jongg clones I have played, none is closer in quality to Activision's classic Shanghai than Imperial. In this type of game, you remove matching pairs of tiles (which must be free on the left or right and have no other tiles on top of them) from a layout of tiles. The goal of removing all the tiles may sound simple, but it really takes plenty of strategy to accomplish. The game is highly addictive too.



DeliTracker 2.01

by Delirium Softdesign

DeliTracker is probably the most powerful Amiga music player ever for shareware. It recognizes 58 music formats, notably Pro/Noise/SoundTracker MOD, IFF 8SVX and SMUS, MED and OctaMED, and WAV. Surprisingly, it handles 8, 16, and 32-voice PC soundcard formats too!



Imperial 2.0

by Jean-Marc Bursot
Imperial 2.0 is a Mah-Jongg clone that shakes the tiles off the competition.

Imperial offers the original Mah-Jongg dragon layout plus five others, all featuring the traditional seven suits of Chinese tiles. The tiles in each layout can be arranged a billion ways, so you can play a random arrangement or choose one by number. If you get tired of the predefined layouts, you can create your own with the built-in editor. Using it is very intuitive, and it even recognizes unplayable layouts, ensuring that every game has a solution. Imperial's other niceties include one and two player games, an unlimited undo of moves, an advice feature, and the ability to view the complete solution to any game from the start - unfortunately not from your current position.

There's hardly anything to quibble about in this marvelous puzzler, except perhaps such trifles as the lack of a reward for solving a game and that Shanghai is a bit more attractive.

Reset 3.1 (2.04+)

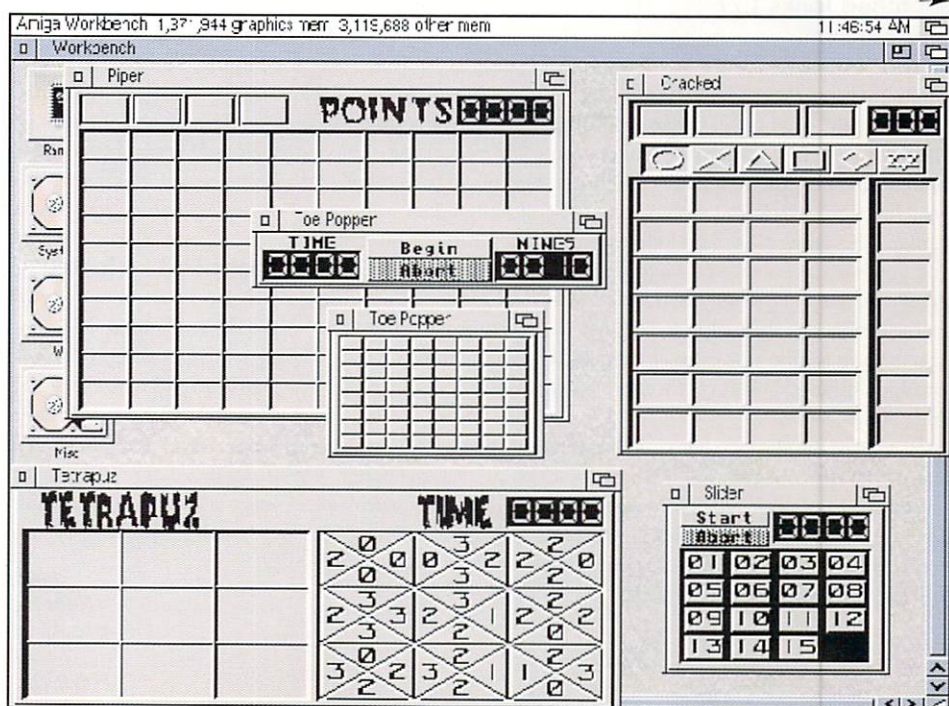
by Martin Schlodder

Aminet: /util/batch/reset31a.lha

This diminutive program doesn't do much at all, but it's still useful. Reset resets your computer three different ways: SIMPLE, COLD, and KICK. SIMPLE does a warm reset like pressing Control and the two Amiga keys. COLD removes the ExecBase structure from memory, eliminating any normally reset-resistant things, particularly RAD:, RAM-based Kickstarts, and viruses. This is equivalent to flipping the power switch off then on. The KICK option removes Kickstart from the A1000's Writeable Control Store, although I don't think too many Amiga users will need it. Each method can have a five-second interruptible countdown.

The primary advantage of this utility is that it doesn't force your hard disk to slow down then speed up again like the "three

Workbench Game Collection 1.2.1 by Kevin Crate
The Workbench Game Collection 1.2.1 is a fun little collection of puzzle games to play on the Workbench. You get Tetrapuz, Toe Popper, Slider, Piper, and Cracked.





Scorched Tanks 1.77
by Michael Welch
Scorched Tanks gives up to four players (computer or human), a choice of 60 weapons and 13 shields to battle each other.

finger salute" does, eliminating that extra stress. Furthermore, it makes sure no disk activity is in progress during a reset, preventing read/write errors.

Reset normally runs from the shell, but it's much more convenient from an icon (via IconX) or the Tools menu (via AddTools, ToolManager, etc.). Here's a handy script I use on my A1200 to invoke Reset:

```
; reset script, requires 3.0+
;
RequestChoice >ENV:boot
"System Request" "Reboot the system?" "Warm | Cold | No"
if $boot eq 1
    C:Reset SIMPLE
else
    if $boot eq 2
        C:Reset COLD
    endif
endif
```

Scorched Tanks 1.77

(shareware, \$10)

by Michael Welch

Aminet: /game/shoot/scorch177.lha

Veterans from the early days of computing may remember Artillery, a game in which two players controlling opposing cannons perched on mountains take turns shooting at each other. Scorched Tanks took that vintage concept and updated it for the Amiga. This game allows up to four players (computer or human), and you have a choice of 60 weapons and 13 shields, producing many creative effects ranging from huge nuclear blasts to bouncing warheads back to their source. You also have a choice of winds, gravity, and terrains for extra challenges. The whole thing is wrapped up in a slick interface complemented by good graphics and sounds.

A lot of the strategy here involves finding the best firing angle and power for your projectile. The quicker you do this, the better your chances of destroying your opponent before you're destroyed. Of course it helps to have effective weapons and shields. While Scorched Tanks is elementary in concept, its depth of play will keep you coming back again and again.

Workbench Game Collection 1 2.1

(shareware, £5; 2.04+)

by Kevin Crate

Aminet: /game/think/wb2gamesV2.1.lha

Now here's something I've been waiting for: a fun little collection of puzzle games to play on the Workbench. You get Tetrapuz, Toe Popper, Slider, Piper, and Cracked, but sadly no version of Tetris. The only Workbench limitation is that Cracked and Piper aren't properly font-sensitive, so their displays won't look correct if your system default text font isn't topaz 8. Written by the same author, all the games have a similar style which includes the use of some familiar digitized voices from TV and the movies.

The object of Tetrapuz is to arrange a group of square tiles so that the numbers on their adjacent sides match. Toe Popper is a Mine Sweeper clone in which you must find and mark all the mines in a field, using the numbers in uncovered squares as guides to how many mines are in the surrounding area. Slider is a typical sliding block game; you slide numbered blocks around the board to get them in the correct order. The idea of Piper is to lay down connecting sections of pipe in order to keep the water flowing through them as long as possible. In Cracked, a Mastermind clone, you get seven chances to figure out the random combination of four images that the computer picks. This game is my least favorite, since the computer seems to reorder its combination every time you guess, making it terribly difficult.

This game collection is clearly well done. All the games, with the possible exception of Cracked, are eminently playable. They'll keep you entertained whether you simply want a break from work or you're waiting for some complex 3D image to render.

Things I'd Like to See

Uninstalling software cleanly has become a hot topic in the PC Windows community lately because of its difficulty. The problem is so acute that several "uninstallers" are on the market. Things aren't nearly so bad with the Amiga, but uninstalling still can be tedious when program elements are copied to system directories (C:, S:, Devs:, Libs:, etc.). Therefore, it would be nice to see all Amiga programs that modify anything outside their directories come with uninstalling utilities. Ideally, they should have both install and uninstall scripts.

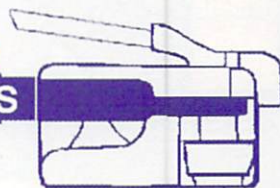
•AC•

Please Write to:
Henning Vahlenkamp
c/o Amazing Computing
P.O. Box 2140
Fall River, MA 02722-2140

on line

by
Rob
Hays

amiga telecommunications



When you think of recreation and your Amiga, you may not automatically think also of your modem. After all, with the exception of a few commercial games such as the Fighter Duel series from Jaeger Software, modems and games just don't mix much. Virtually all of the commercial information services offer games that can be played on line, although most are of the text-based variety, or ASCII representations of tic-tac-toe. GENie has a different story for Amiga game players.

We have probably all seen the print ads run by GENie that show an integrated circuit chip with the caption "this opponent is programmed to be challenging." Below this is a picture of some leering guy with the caption "this one wants to tear your lungs out." No matter how good the programming, there will come a time when you know all of the possible moves a silicon based opponent can make. The ultimate challenge comes from those unpredictable human beings.

The GENie service offers more than a dozen different multi-player games for playing on line. Some of these also fall into the above categories, but many of them require special front end software, usually taking the form of a specialized terminal program for each specific game. While there are some that are not available for the

Amiga users, several of the best have Amiga versions. Available games run the gamut from medieval quests, to space-based conquest, to real-time trivia challenges.

Many are team games, where you join one side against another. Some, like Air Warrior (Figure 1), have more complex and dynamic situations. In this game, presented by Kesmai, there are three warring countries, each fighting against the other two. They are all equipped with vintage aircraft and other vehicles, mainly from WWII and the Korean War. You join a squadron fighting for one of the countries, and fly off to do battle. You can arrange to fly alone or in a group. Pilots can communicate with others on the same side via messages typed into a window at the bottom of the main screen. Some planes,

such as the bombers, can hold several crew members, who can chat on the intercom in the same manner.

The front end software, besides being a terminal program, also functions as an off line flight simulator. This allows you to practice the rudiments of flying and landing the various types of planes, without being connected to GENie. The current version of the Amiga software is called *amiaw29.run*, and is a self-extracting file. Simply type the file name to unpack everything. This file contains the basic program, documentation and hint files. Also included are some sample sound and graphics files, and a demo by some expert flyers. The file is 722,304 bytes large, and will require nearly an hour to download at 2400 bps. The download is free of GENie connect time charges however. Air Warrior will run on any Amiga, but due to the size of the files, a hard drive is required.

Perhaps a game of cards would be more to your liking. RSCards, from Factory Programming (Figure 2), allows you to play any of seven different games real-time with other players. The games are Blackjack, Poker, Chess, Checkers, Bridge, Reversi, and Backgammon. You can play with or without the special front end software. The Amiga version is called *amiga.run*, and again is self-extracting. The file is small, 39,680 bytes, needing only about three minutes at 2400 bps.

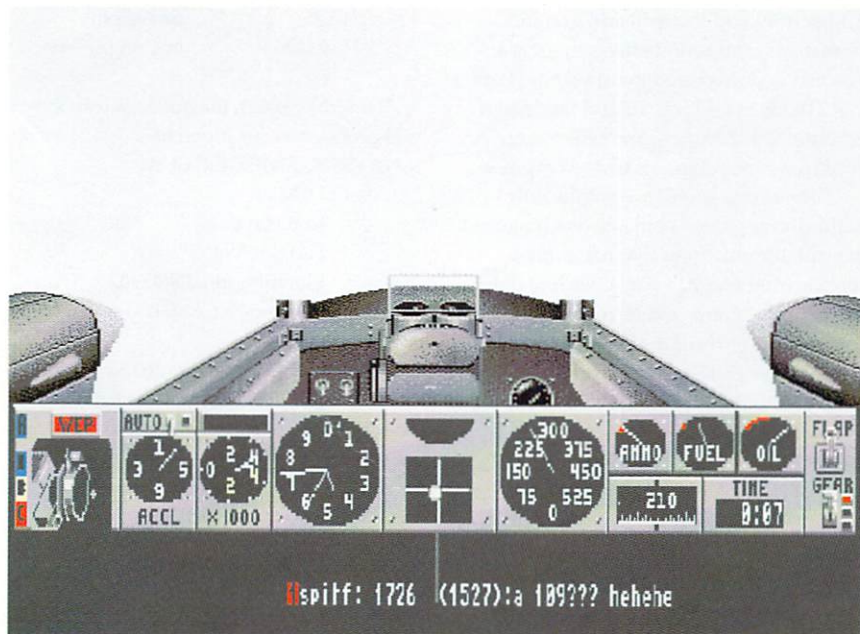
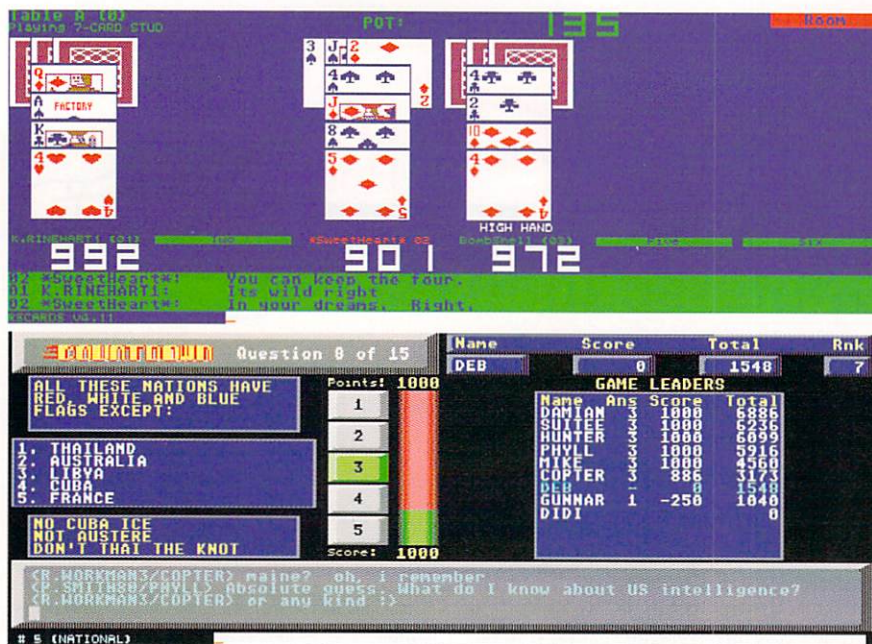


Figure 1 Air Warrior
In Air Warrior there are three warring countries equipped with vintage fighters and bombers. Join a country and fly alone or in groups.



If Trivial Pursuit is your all-time favorite board game, check out NTN Trivia (Figure 3). This multi-player trivia contest costs \$3 per hour above GENie connect charges, with four games typically being played in an hour. This game is run by the NTN Interactive Television Network, so you may find yourself playing against people in hotels, restaurants and bars, not just other GENie users. A chat feature is included as part of the software, and specific topics are featured on certain nights. Winners accumulate points that can be exchanged for things ranging from hats and GENie credits, to camcorders and televisions. The current version of the Amiga software is v1.21, and is called trivfe.run. At 2400 bps, the 77,824 byte file transfers in about six minutes.

If you are looking for more of an intellectual challenge, try Federation II. Here the accent is on cooperation rather than confrontation. Make alliances with those above and below you in rank, while competing with everyone else. You begin as a simple trader, and eventually move up to control vast sections of the universe. Although Federation II is text based and requires no extra software, there is a multi-media terminal front end available for Amiga users. This provides a mouse, windows, and menus interface, as well as sound and graphic affects. For instance, you can set it up so that if a particular player signs on and says "Hi", a scanned photo or other art file will be displayed, and sound samples can be played. This file, called newmmterm142.lha, is another long

download that is free of GENie connect charges. Its 227,712 bytes will take about 19 minutes at 2400 bps.

If magic and mystery are your forte, Orb Wars by Simutronics (Figure 4) should appeal to you. Many actions, such as character generation for new players, will be familiar to anyone who has played any of the Dungeons and Dragons types of games. Set on an island created by Merlin, the Orb Wars are fought between two opposing teams of wizards. Each team consists of 1 to 5 players, and typical games run about 30 minutes. Orb Wars will operate with just about any terminal program, with better displays generated with VT100 emulation. There also is an Amiga front end that will add graphics, animations, and sound effects to the wars. You can find this listed as orbwarsfe14.arc. It is 241,280 bytes long, should take about 20 minutes at 2400 bps, and will require Arc or LHArc type programs to de-compress.

The above games are not the only multi-player games available on GENie, but they are the only ones that use Amiga-specific front end programs. Each of the front end programs can be found within the area for that particular game. All of the multi-player games can be found by typing "move 800" at any GENie prompt. If you don't have a GENie account, set your terminal software to 8 data bits, no parity, and 1 stop bit. Use half duplex or local echo, and either 300, 1200, or 2400 bps. Dial 1-800-638-8369 (in Canada 1-800-387-8330). When you see the word CONNECT on your screen, type "HHH" (without the

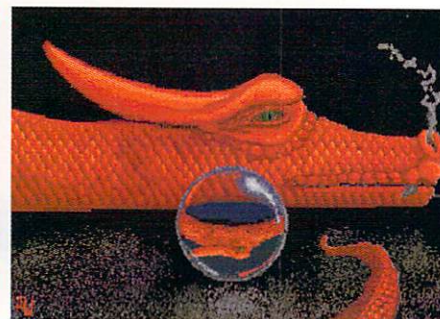


Figure 2 (Above Left): RSCards allows you to play any of seven different games real-time with other players.

Figure 3 (Left): NTN Trivia is a multi-player trivia contest pitting your skill against people in hotels, restaurants and bars, not just other GENie users.

Figure 4 (Above): Orb Wars is a role playing game for the adventurous.

quotes), and press return. GENie will respond with the prompt "U#=", to which you respond by typing "AMIGA" and press return.

Notice to Sysops

If you run an Amiga specific BBS, send me the information callers will need to access your system. Phone number(s), modem speeds, software settings, etc. As a service to the Amiga community I will include the information I receive in this column from time to time. Send the info to any of the addresses below.

How to reach me

R.Hays5	on GENie
RHAYS	on Delphi
72764,2066	on CompuServe

InterNet users, the quickest response will probably occur if you use:

R.HAYS5@GENIE.GEIS.COM

For U.S. Mail:

Rob Hays
P.O.Box 194
Bloomington, IN 47402

Please include a SASE if you need a personal reply.

That is all for this month. Next time we will check out a national system with important features for Amiga users that you may never have heard of. See you on line!

•AC•

You May Also Write to:
Rob Hays
c/o Amazing Computing
P.O. Box 2140
Fall River, MA 02722-2140



Roomers

by The Bandito

The Bandito discusses the CBM turmoil and the Amiga's future - Where we get so upset, we join in.

[These statements and projections presented in "Roomers" are rumors in the purest sense. The bits of information are gathered by a third-party source from whispers inside the industry. At press time, these rumors remain unconfirmed and are printed for entertainment value only. Accordingly, the staff and associates of Amazing Computing cannot be held responsible for the reports made in this column.]

it's not as if it's easy to get news coverage of what may or may not be happening.

Many of the rumors had solid dates attached to them. "We'll hear by..." and then a date is given. When that deadline passes, the rumor starts again with a new deadline. This continues until credibility is exhausted, whereupon a new rumor is started.

that's accurate. Some rumors are coming from the various European sales divisions, but those poor people don't really know much more than anybody else, their posturings to the contrary.

Samsung

Let's try to deal with the biggest rumor of all first: Samsung. Various tales

Grave Robbing

Well, Commodore's corpse was not even cool before the squabble for the choicest pieces broke out. Actually, from the best sources the Bandito has, the rumor activity has been even hotter than the interest in Commodore. Practically every large company and a number of small ones have been identified as potential or actual "Commodore buyers." Of course, these rumors have been nurtured by the near-complete absence of hard information, leaving a rampant growth of speculation, wishful thinking, and downright fables to create an almost impenetrable thicket around the truth.

Rumors have been racing to and fro on the infobahn; plausible ones "from a knowledgeable source" or "someone who ought to know," and more dubious ones like "my friend says" and "I heard from a dealer that." Of hard information there is nary a peep. And this isn't surprising, because Commodore as a press-releasing entity doesn't exist any more. With legal proceedings taking place in the Bahamas,

Rumors have been racing to and fro on the infobahn; plausible ones "from a knowledgeable source" or "someone who ought to know," and more dubious ones like "my friend says" and "I heard from a dealer that."

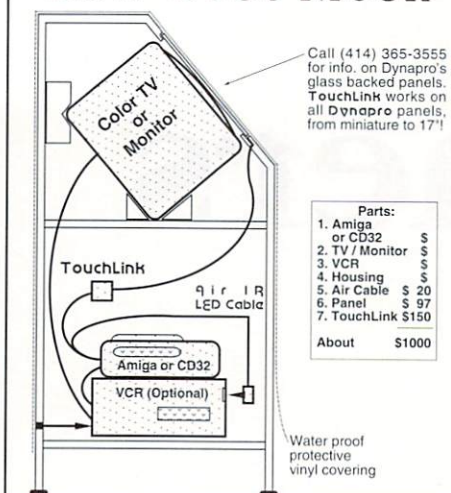
There are a few things we can be sure of, Commodore U.S. and Commodore International are hollow shells, with a bare handful of employees left to be able to hand off the files to whoever buys them. The sales companies in various countries are still in existence, but without product to sell their existence is a rather hollow victory. Still, they may be sold in the liquidation, so they keep their doors open.

The Bandito is trying to sort through the confusion to get at the real story, but it's not an easy task. After all, there's hardly anybody left at Commodore these days to leak any information, even if they had any

would have you believe that Samsung is not only interested in buying Commodore, but they actually bought it months ago. As usual, the grain of truth at the center is far smaller than the puffed-up speculation. From the best of the Bandito's sources, the interest level of Samsung is not necessarily up to the highest of hopes. Some sources say Samsung's main interest is acquiring Commodore's European sales offices and network, as a way of expanding their presence on the continent.

Others say that Samsung has wanted to crack the US computer market for years, and they feel that the Amiga is their best bet

Low Cost Kiosk



TouchLink works with MediaPoint, Videostage, Cando, JCL, AmigaVision and other authoring systems. The only touch screen that plugs directly into the CD32 via the gameport. The TouchLink driver is a fully Amiga friendly commodity and compatible with ALL Amigas, Amiga video modes, resolutions, and scan rates. Included is a CD32 development disk, the driver can use the CD32 flash memory to hold its calibration data for CD ROM only kiosk. You can call our BBS and download the entire TouchLink Product Disk which contains our complete manual as an AmigaGuide document.

Products from Geodesic Designs, Inc.

AirLink III (super bright IR works up to 15 meters.)	\$ 75.00
AirLink III (with old AirLink trade-in)	\$ 35.00
Air IR LED Cable (transmit only, includes software)	\$ 20.00
TouchLink (includes hardware unit, software, & cables)	\$ 150.00
TouchLink (with Dynapro 95612 15" flat panel)	\$ 270.00
TouchLink (with KeyTec MagicTouch 14" snap on panel)	\$ 270.00

Prepaid and COD orders. Outside US/Canada, add \$10.00

Geodesic Designs, Inc.
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Duluth, GA 30136
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to do this. Of course, you do have to wonder about how Samsung might be doing if North Korea starts lobbing bombs at South Korea, but let's hope this doesn't come to pass. Anyway, Samsung is a large, diversified firm with a great deal of resources and a worldwide presence and lots of experience in low-cost manufacturing. They are certainly big enough to provide the resources necessary to get Amigas rolling out the door again, and perhaps even to restart future Amiga development-if they're so inclined.

Interestingly, Samsung and Hewlett-Packard have a number of cooperative deals in place; could it be that they might share Amiga technology? HP gets the set-top boxes, while Samsung takes the desktop computers? An attractive scenario, even though there are no facts to bolster the speculation.

Whatever the case may be, from the best information received by the Bandito Samsung's initial bid was too low, and thus all of Commodore's assets went into liquidation proceedings.

So now it's truly a bizarre bazaar, where all sorts of corporations and even individuals may bid on the pieces. The job of the trustees is to sort through these offers and find the best price they can for all the

pieces that made up Commodore. It's not an easy job, and there's no reason to expect that the process will be over soon. Conceivably it could drag on for many months.

Bids Anyone?

Let's look at some of the other players that have been rumored to be showing interest. CEI (Creative Equipment International) was one of Commodore U.S.A.'s last distributors, and they certainly seem to be interested in keeping the product line going. But they are a relatively small operation, and they may not be able to swing the sort of bid the trustees are looking for. Still, if no big companies step forward to put up a lot of money, CEI may walk off with the rights to the Amiga for a veritable song.

Of course, there's still the Hewlett-Packard rumor making the rounds, with giant HP being interested in the AGA chip set for set-top boxes. But HP isn't really interested in anything else, not even the operating system. And they don't really want to pay too much for the chips, not when they're perfectly capable of creating their own chip set. If they can save some money by buying a chip set that's already functional and debugged, well, that's great. Unfortunately, this won't mean much to Amiga fans.

Amstrad is said to be interested in CD32, as is Philips. Now Amstrad has a reason to be interested in CD32; they'd like to have a good game machine to sell. But Philips? No way; they've invested far too much into CD-i to want any part of CD32. Amstrad, though, needs a hit product, and CD32 has been just that in the UK. And Amstrad would dearly love to have a product that could sell in the lucrative US market, and again CD32 has that potential. Amstrad might even be interested in the rest of the product line. But do they have the finances for such an operation?

And then the rumors abound about possible consortiums of developers, along with various large companies. Every major Amiga developer has been hinted at, along with major electronics firms. The real truth is that most Amiga developers are in poor financial health, and have no money to put towards a bid for the Amiga. So the odds of a bid by Amiga developers are not good, despite grandiose claims by some people. The Bandito hears that most of the big developers are just waiting to see what happens and who makes off with the technology, then they'll step in and try to work with that company.

And what about the money from this

auction? Where does it go? The pieces get auctioned off to the highest bidder, the proceeds going to help pay off the over \$300 million dollars owed to various creditors. It's unlikely that stockholders will see a penny of this, by the way. They're last in line when payments get handed out. Secured creditors, like Irving Gould, are first in line. Funny how that works, isn't it? Old Irv won't be taking a bath because Commodore sinks. Oh, sure, all that stock he held has become worthless waste paper, but that's not really money. He's made plenty off of Commodore in the past, from selling stock and making loans to the company, not to mention the million-dollar salary he pulled in. Shed no tears for Irving Gould, for he's still worth around \$100 million dollars. He's probably kicking back in the Bahamas, no doubt, idly wondering what to invest in next. Does he even have an Amiga in any of his houses? Has he ever used one? Seems doubtful, doesn't it?

Is There A Future For The Amiga?

Let's start with the bad news first: From what the Bandito can tell, no serious buyers are interested in reviving the A4000 line at all. (Oh, there are some dreamers out there who think it's possible, but none of them have the resources to make it so.) There might be a few thousand sales to be made there, but let's face facts: the A4000 just isn't competitive pricewise with the latest machines. And in limited quantities (the only quantities that could be sold in the near term), it would be even more expensive to produce than it was before.

Editor's note: There are groups interested in keeping the Amiga line. In truth, unless you wanted a network of sales companies that have already been stripped of most of their staffs and demoralized by a corporate head who was never known for inspiring his people, then what else would all of these companies be bidding for? They not only want the Amiga line—they need it. (Please see the interview with David Pleasance from CBM UK on page 80 of this issue.)

By the end of this year, Pentiums will be well under \$2000 for complete systems, as are PowerPCs now. We're talking up to 10 times the performance of an A4000 for half the price. The Amiga always had a hard time selling in large numbers to business, and about the best rationale it used to have was the amount of power you got for the low price. With that argument gone, who would buy a business Amiga?

Editor's Note: Uh Bandito, just a thought here, you are quoting top list prices for the Amiga 4000 and bottom prices for the

Pentium. I believe most people would agree that the Amiga 4000 was already nearing the \$2000 mark before the liquidation. In fact, one major mail order company had priced the 04 4000 at \$1995 and the 030 4000 at \$1695 just before the liquidation announcement.

As far as your assumption that the Pentium or Power PC is ten times faster than the A4000, I don't believe the figures are that high. Besides, the basic PC system now demanded by software developers is at least a 486SX. Most software will not run on anything slower and there is a reason. Windows and even DOS has placed so much extra baggage on these "advanced" systems that the products will not perform any better without the added horsepower (believe me I know). So what does it matter if the PC crowd has created a faster basic processor, if the end result is slower than molasses and runs like a ten year old dog at the track, you are still not getting anywhere.

And the A1200 isn't really competitive, either. An A1200 system runs you about \$800; for about that price you can get a PC system that has 5 times the horsepower, or a Quadra 605 with a 68040 in it. Once again, the price performance just isn't there any more. Commodore used to be able to sell the Amiga because the fat margins of the big computer companies left it room to maneuver. Well, those fat margins don't exist any more. And, not surprisingly, neither does Commodore.

Editor's note: Excuse me, I realize I am butting in here, but I assume when you are discussing systems at the \$800 mark, you are talking about sales for the PC and top of the line prices for the Amiga again. This is once again incorrect. Those systems are severely limited in both speed and memory. The Windows version of Microsoft Office now requires 4MB of RAM and a 486 processor. This is the base amount available on machines in the \$1000 range, on sale. If you want to add ACCESS to your Microsoft Office, Microsoft requires 8MB of RAM. Since ACCESS is a relational database that is fully integrated into the Microsoft Office environment, it will probably become a standard. But with an 8MB overhead, PC owners will be paying a hefty price for its use. With all this added overhead, the Amiga 1200 with PCMCIA adaptability, and more—still makes it a great portable device for business presentations, home use, and entertainment.

OK, then, what about the next-generation Amiga, with the AAA chip set, a 68060 CPU, a DSP, ReTargetable Graphics, 16 bit audio, and the other bells and whistles that have been hinted at in the past? Sadly, it's a pipe dream. The AAA chip set is far from debugged and ready to go; work was halted over a year ago. And

even then, the chip set was designed in 1989 originally, and just doesn't compete with the latest SVGA chip sets. RTG is even farther away from reality, as is DSP support in the OS. In fact, the OS would need many man-years of effort to support all these new features. So such a project would take years to put together, even if you had all the experienced engineers handy, which of course you don't. They've all left for other companies. Even if you did get a new machine together, you'd need software applications that would take advantage of these features. Unfortunately, Amiga software developers are already scarce, and they'd probably be extinct by the time such a machine appeared.

Sorry Bandito, your information on the AAA chip set is incorrect. While there was some discussion to cease the development of the chip set, strong opposition was registered and the work was continued until CBM was forced to close their doors. As Lew Eggebrecht stated last December at the World of Commodore in Toronto, that the chip set was in full development (Amazing Computing February, 1994). All indications show that the current chip set is now waiting the final silicon which will then be used in prototype machines prior to full production.

As far as the developers and engineers of the system, you have a point. Time is of the essence. Most individuals who would be a great addition to the development staff are going elsewhere and who could blame them. Yet, many are waiting these few weeks in an abnormally hot summer to see where the Amiga is going. They have spent a good portion of their lives creating this environment—many are not as willing to drop it as you assume.

But even if you thought you could sell Amigas, who would sell them for you? At this point, it's a whole new computer product line. There is no dealer network left, certainly no goodwill towards the company. Commodore's mental mind share among potential computer buyers is as near zero as makes no difference. Restarting Commodore would not only take at least \$25 million and 4 months of time to get products shipping again; it would take untold tens of millions to advertise, develop retail channels, and hire people to make all this happen. By the time Amigas were in production again, no Amiga dealers would be left. They'd either be bankrupt or selling some other sort of computer or equipment.

Editor's note: Good point. Most of the bidders who are interested in the Amiga technology have placed their bids with a definite deadline and provision that they must get the assets as soon as possible in order to reestablish

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the Amiga. This is so they can maintain the
current dealers. In addition, the new owners
will most probably want to create different
means to get the Amiga and CD32 into the
hands of new consumers. Since they must also
reestablish an Amiga marketing plan, they may
decide to look at infomercials or spot commer-
cials as the means to this end.

And then would people buy this
machine, even if the price was right? Only if
there was competitive software. And aside
from multimedia and video applications,
the Amiga's software is not really competi-
tive with standard business applications. Is
there an Amiga spreadsheet that can stand
up to the best of the PC or Mac spread-
sheets? Word processing? How about
networking and electronic mail and
workgroup software? Nope, it's not there.
So the Amiga can't be sold as a business
computer.

Excuse me, but with every computer
platform banging its chest to be a multimedia
machine for desktop presentations and more, the
graphics ability and video capability of the
Amiga make it a very interesting alternative for
business use.

Wait a minute, you say. Why not get
developers to write some good software?
Well, it's not that easy. Evangelizing
software developers is a task of monumen-
tal proportions; all the major ones are busy
enough with Windows and Macintosh
products that they have no desire to mess
with yet another platform.

Show them a way to make a profit and
they will deliver. With a strong European
market and a determined world-wide marketing
campaign (plus the option of the AAA chip set)
you will have more than enough to attract
developers. If not the larger ones, then at least
the smaller ones who have found making a profit
in the current low-margin IBM and MAC
markets extremely difficult.

OK, then, what about the home
computer market? Can the Amiga compete
there? No, not any more. Games? The best
games haven't been on the Amiga for years,
and game companies have no interest in
spending hundreds of thousands of dollars
developing games for a small market.
Educational software? Nope, sorry.

Wrong again. A great deal of develop-
ment for other platforms is still first done on the
Amiga. Most artists find the Amiga tools much
easier to use and when you begin to grab video
graphics for further manipulation, the Amiga is
supreme. One new game for the PC, *Harvester*
from Merit software has been completely drawn
on the Amiga with *LightWave*. The artists were
not interested in using the Amiga to do the
work.

Which leaves video and multimedia.
The Amiga's hardware and software can
certainly compete in those markets, can't
they? Well, in some cases they can. But
things like 3D software thrive on raw
processing power, which even the A4000
lacks compared to a Pentium or a PowerPC
computer. And even paint software needs
the added horsepower these days. Amiga
paint programs, once the best anywhere,
are no longer top of the heap. There's
nothing to compare to Fractal Design
Painter on the Amiga.

Raw power misconceptions aside, *Fractal
Design Painter* is a very good artist's product,
however, even it could learn a few tricks from
such advanced products as *Brilliance!* from
Digital Creations with multiple undos, special

But things like 3D
software thrive on
raw processing
power, which even
the A4000 lacks
compared to a
Pentium or a
PowerPC computer.

animation techniques and more. Add to that the
price of Painter and you begin to see why the
power of the Amiga is still very high.

Any applications where the Amiga
does shine (such as the Video Toaster or
Scala) either have competition growing fast
or are being ported to another platform.
Check it out; the FAST Video Machine isn't
very cost competitive with the Toaster, but
they've just announced a \$600 DVE board
for PC clones that certainly is competitive.
No, not as nifty as the Toaster, but then
again it's a lot more affordable, and you can
actually buy a computer to go with it.
Which is not true of the Video Toaster these
days.

Currently there are only a few A4000's
left in the distribution pipe line. However, the
major bidders (at least the ones willing to talk)
who want the Amiga have stated that they will
push to get machines into the marketplace by
Christmas.

Where's the good news in all this?
There is some. There is still a demand for
Amigas and CD32, despite the recent
problems. Companies with Video Toasters
would certainly be interested in them, as
are the cable companies that use Amigas
with Scala to show their preview channels.

CD32 has established a foothold in the UK, even if it's been less than stellar elsewhere. And it's still very competitive with the latest generation of game machines. In fact, CD32 is the jewel in the product line right now, with the best price-performance in its class.

And the desktop Amigas could still be a viable platform for some years to come, even without a leap into the next generation. How? Price, price, price. If Samsung (or whoever) could produce them in quantity with low margins, the retail prices could be low enough to be attractive even against PC clones. An A4000 for \$1000 would certainly sell well, at least to owners of other Amigas, and its raw power could attract new buyers. The 68060 chip promises a relatively easy way to get some serious horsepower into the Amiga without requiring too much system software rewriting or hardware redesigning. And a good engineer could take existing SVGA chips, audio chips, and DSPs to create a pretty cool set of features. And Apple has shown that it's possible to rewrite your system software to work on a RISC chip, though it's a mammoth undertaking. So while the odds are long, there is a chance for the Amiga to emerge from these trials unscathed and, in fact, better than ever before.

Party's Closing For Third Party

While Commodore fiddles, the third party developers are burning. Especially hard hit are the hardware manufacturers, who are even more dependent on new hardware sales than software makers. The Bandito hears that some of the biggest names in Amiga hardware are having financial problems ranging from bad to worse. Layoffs have already occurred, and rapid retrenchment is the order of the day. While these companies pray that someone buys the rights to the Amiga and starts making and selling them soon, they have to do something in the interim.

In some cases, the income has plummeted. It's hard to sell an Amiga add-on when Amigas aren't being sold. Worse still, even people who already own Amigas are slowing their purchases, wondering whether they should continue to invest in a machine that may or may not have spare parts available in the future.

So the hardware makers are scrambling to find ways to bring in some cash and reduce their spending. Some are busily trying to port their products to another machine, hoping that they can complete the task before they run out of

money to be able to market the product. Some are still believers in the Amiga dream, and are trying to make more money from their installed base while hoping that Amigas reappear in the marketplace.

Caveat Vendor

The decline and fall of Commodore has been difficult on those last die-hard Amiga dealers, too. Amiga mail order businesses are cutting back sharply on their advertising while jumping swiftly into other product lines. Creative Computers has been pushing their Apple products very hard, for instance. Tenex has been getting into PC clones for some time. Other mail order businesses are finding ways to adapt. Or they're closing their doors instead.

*Raw power
misconceptions aside,
Fractal Design Painter
is a very good artist's
product, however, it
could learn a few
tricks from advanced
products such as
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Meanwhile, the story is grim in the retail stores. Some retailers still may have a few CD32's left, but supplies of other Amiga products and parts are limited to nonexistent. So that dying breed, the Commodore retailer, is heading for complete extinction very swiftly. The smart ones were already carrying other products, and now will switch over completely to other platforms. The ones who don't move quickly enough will simply go out of business.

The Bandito really feels for those poor souls who had to place their Amiga in the hands of their dealer for repairs. Now that Commodore is sunk, they may never see their beloved Amiga again. Nor the money they spent on it, either. Only if someone takes over Amiga production and decides to take care of all the repair work outstanding will these machines be rescued from limbo.

The trouble at retail doesn't bode well for the Amiga software business, which was already in big trouble because of the lack of retail outlets for Amiga software.

The pressures will only increase on the already burdened Amiga software developers.

Software Casualties

Speaking of which, did you hear that New Horizons/Central Coast Software is no longer a going concern? They won't be the last casualty of the fallout from Commodore's demise. Most Amiga developers have already been moving to other platforms, of course. Some have been quite successful at it, like Gold Disk. Others are still in the process of moving over, but are already finding that it's a better business in other platforms. ASDG is finding that they can charge real prices for SGI software and Macintosh software, and it still seems cheap to people in those markets.

SCALAing Up

One developer that's busily looking for new opportunities is Scala. They've hired away the cream of Commodore's engineering staff, including Dave Haynie and Jeff Porter. What is Scala up to? They're working on porting their products to the PC, of course. They're creating their own version of Exec to handle events on the PC side, and calling it a MultiMedia Operating System. They're working on hardware projects, too. Should be interesting to see what they come up with; maybe they'll find a way to put some of the Amiga's functionality into a PC clone.

Final Note: While there are several places where we take issue with the Bandito, one area we do agree on is time. The Amiga must be placed in the hands of a company soon in order to continue the Amiga. Continued delays will take their toll on dealers, developers, and new users. We must be prepared to back the company who finally gets the technology and both support and push them into making the Amiga all that we know it can be.

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Top 10 CD³² Titles

June May

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2	3	Labyrinth of Time
3	-	Football
4	4	Chaos Engine
5	9	Gunship 2000 (New)
6	5	Ultimate Body Blows (New)
7	-	Pirates Gold
8	1	Microcosm
9	-	D/Generation
10	10	Sim City

Top 10 Amiga game Titles

June May

1	1	Alien Breed2 & Body Blows Galactic Bundle AGA
2	6	Mortal Kombat
3	2	Frontier: Elite 2
4	8	Settlers
5	-	Cannon Fodder
6	4	Nigel Mansell Driver Special
7	-	Stardust
8	-	Gunship 2000
9	-	Star Trek 25th AGA
10	5	Hired Guns w/4 Player Adapter

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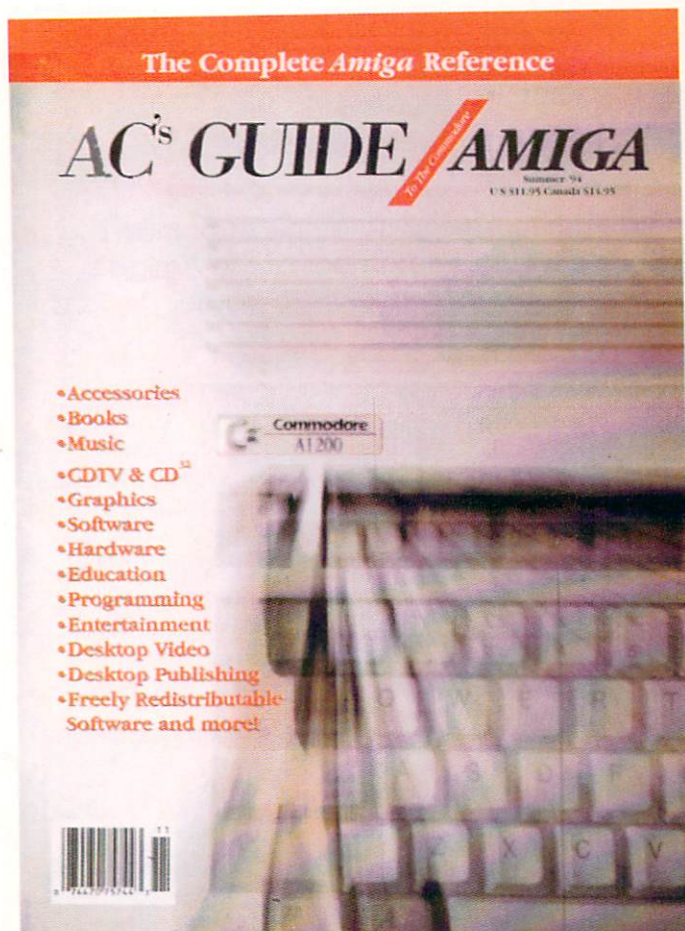
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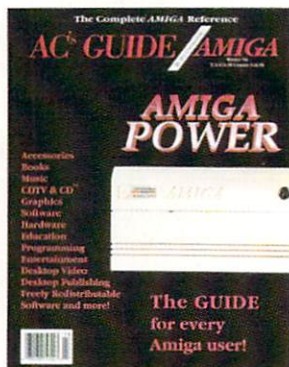
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DIVERSIONS

Jurassic Park

by Jeff James & Rob Hays

Two Amazing Authors offer their individual impressions of the Amiga's latest movie tie-in game.

Jeff James

Besides death and taxes, there seems to be one other constant in the universe: a successful movie will spawn dozens of "officially licensed" computer games. A quick perusal of your local software shop's shelves will reveal games based on the following films: *Terminator 2*, *Aliens*, *Hook*, *Star Trek*, *Star Wars*, and dozens of others.

With the recent blockbuster success of Steven Spielberg's *Jurassic Park*, it was simply a matter of time before a flood of dinosaur-based gaming titles hit the market. With the release of *Jurassic Park* (JP), Ocean hopes to give gamers a taste of the hair-raising action and suspense of the film. Although it might not have succeeded in

completely achieving that goal, JP is a fun arcade romp nonetheless.

The game begins with the player in control of Dr. Grant, the famous paleontologist from the film. Grant's goal is to make his way through the open dinosaur paddocks to the visitor's center, where he can

Once you've managed to get Grant to the visitor's center, the game shifts to a first-person, three-dimensional arcade game. Gamers familiar with *Wolfenstein 3D* or *DOOM* on the IBM will find this portion of the game familiar. Although the graphics and scrolling aren't quite up to the standards of

All the denizens of *Jurassic Park* are drawn up in exquisite detail, from the tiny teeth on smaller dinosaurs to the colorful texturing and shading on the hide of the T-Rex.

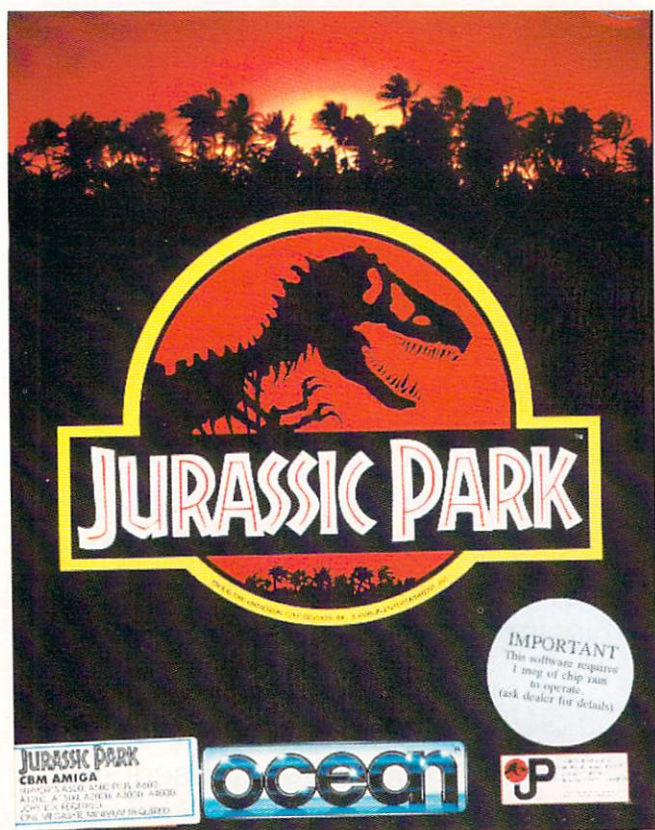
restore the park's electrical systems and call in a rescue chopper. In the first part of the game, the player must maneuver Grant past packs of rampaging Gallimimus, Compsognathus and other types of dinosaurs. Armed with only a sparking tazer to shock the dinosaurs, Grant must avoid the hungry denizens of the park while snatching up weapons, ammunition, and medical supplies.

To make matters worse, Grant must rescue two children — Tim and Lex — that are hiding somewhere in the park. Once Grant finds the kids, they'll obediently tag along as best they can. Viewed from an oblique, Pterodactyl's eye view vantage point, this portion of the game has bright, colorful graphics. There is plenty of foliage to hide in, and an occasional utility shed will provide shelter and access to the sewer system beneath the park.

those aforementioned PC titles, this section does give Amiga gamers a taste of what those games are all about.

All the denizens of *Jurassic Park* are drawn up in exquisite detail, from the tiny teeth on smaller dinosaurs to the colorful texturing and shading on the hide of the T-Rex. Although the version I looked at for this review was ECS-only, graphics and animation were lush and colorful. Ocean plans to bring out both an AGA and a CD32 version of JP, both of which should offer substantial improvements over JP's already colorful graphics. Music and sound effects are especially well-done, particularly so with the bellowing roar of the T-Rex as he charges after Dr. Grant.

As with most games coming out of the UK these days, hard drive installation is not supported. The copy protection is of the manual look-up variety and doesn't intrude too much on game play.



Finally, JP won't run on a standard NTSC Amiga without some help from a PAL-booting program such as Degradar 1.3. A Pal Boot disk is provided with the game.

It might not be the most exciting game release to make it's way across the Atlantic, but JP is a solid piece of software entertainment. If you've seen Jurassic Park a dozen times and simply can't get enough of those Velociraptors, Dilophosaurs and Tyrannosaurs, JP is definitely worth a look.

Rob Hays

You read the book, you saw the Steven Spielberg movie, now Ocean Software gives you the chance to escape from Jurassic Park.

For those few who may not know the general story line, a group of scientists have succeeded in cloning dinosaur DNA. A theme park has been created with live dinosaurs wandering around fenced-in areas, and the insurance company wants a paleontologist to make sure everything is on the up-and-up.

As Dr. Grant, the world's leading expert on dinosaurs, you have been invited to the about-to-open park. Unfortunately, the head computer programmer has been tempted by a competitor to steal frozen dinosaur embryos. He has crippled the park's computer system and defensive measures. Now the dinosaurs are free to roam from area to area, and the normal tracking systems are down. Just to make matters more interesting, you were escorting the grandchildren of the park's owner when your Jeep was wrecked, and your first priority, besides survival, is to find the kids. You will then have to make your way back to the control center, restore the parks systems, and call for a rescue helicopter.

The game begins just after the Jeep crash, and the two children are lost. The action is

fast and furious, with the various dinosaurs behaving and attacking as they did in the movie. If you stop to think about your next move, you will find yourself quickly surrounded and overcome. There are two different types of display, depending on whether you are indoors or out. Outside you see and control Dr. Grant from a viewpoint above and slightly behind. When the action shifts inside, the screen display changes to a through-the-eyes view. Levels of ammunition and health are displayed in both modes.

There is no save game feature, but as you successfully complete each level, you are given a password. Write this down and then use it next time to start at this level. In each area there is a motion sensor that was intended to track the dinosaur population of that area. It also includes a simple terminal that will provide you with information concerning that area, a map, and a general idea of the tasks you must accomplish in order to move on.

The graphics in the AGA version are excellent, there is also a standard version for older Amigas. The continuous soundtrack is also great. Unlike many game soundtracks, this one is varied and subtle enough that it does not become quickly boring. The music fits your current locale; a jungle rhythm for open, outdoor areas; and spooky, creepy sounding music for tunnels and the like. Sound effects are also well integrated with just enough emphasis placed on grunts of pain to almost make you feel the various bites, stings, and knocks Dr. Grant endures.

Just like the park in the novel and movie, Jurassic Park the game is not without its problems. There are some internal inconsistencies within the game. For instance, the basic weapon shoots an electric charge that dispatches smaller dinosaurs. Scattered about the park you will find rifles to use



While your trip through the park (Top) is fraught with danger, you can use the park's computer system (Bottom) to control gates and discover exits.

which presumably are more deadly than a tazer. This is not the case. Critters that require two or three shots from a rifle to die can be zapped with the glorified cattle prod just as easily as the smallest animals. Likewise, first aid kits and other items will re-appear in their original locations if you leave an area and then return.

The biggest problem is that Jurassic Park uses disk-based copy protection, meaning no hard drive installation. Long load times between sections, and switching four disks around should not be necessary in 1994. Actually, there are five disks included. One is a group of utilities that are needed to

make European games run correctly in North America. The only one most people will need for Jurassic Park is one that switches your video to PAL. Not even using the 3.0 Boot Options PAL mode menu choice will allow this game to run.

Grumbles aside, this is a good game, similar enough to the movie so that you have an idea of what to expect, different enough so that the problems are not those solved in the movie.

Jurassic Park
Requirements: 1MB RAM,
Joystick.
Retail Price: About \$50 U.S.
Ocean Software Ltd.
Inquiry #200

Tornado

by Jeff James

If you're one of those Amiga owners who have been anxiously awaiting the great Amiga flight simulator, wait no longer.

If PC owners have been accused of Mac envy, Amiga owners — at least in the area of flight simulators — have a definite case of PC envy. While exquisitely detailed flight sims such as Falcon 3.0 (Spectrum HoloByte), Microsoft Flight Simulator and 1942: Pacific Air War (MicroProse) have graced the monitor screens of MS-DOS computers around the country, Amiga owners have been forced to make do with a paltry handful of underpowered sims (with the notable exceptions of Jaeger Software's Fighter Duel Pro and Psygnosis' Combat Air Patrol).

If you're one of those Amiga owners who have been anxiously awaiting the great Amiga flight simulator, wait no longer. With the release of Digital Integration's Tornado, a blockbuster flight simulator has finally arrived on the Amiga.

Tornado is based upon the Panavia Tornado jet fighter, modeling both the strike (GR4) and air-supremacy (F.3) variants of that versatile aircraft. In Tornado, you get the opportunity to hop into the

cockpit of both versions and complete a wide range of training and combat missions.

Five types of play are offered: explore, simulator, training, single-mission combat and a lengthy campaign mode. In explore mode, you can inject yourself into any mission — simulated or combat — and cruise around the 3D world, visiting parts of the map as if you were flying freely over the surface.

Simulator mode is used to let you get the feel of the aircraft without worrying about such bothersome bits as smashing into the ground or getting shot down, while training introduces you to simple flight operations — such as landing, targeting waypoints and identifying targets.

Single mission combat lets you fly one combat mission at a time, while the campaign mode offers a lengthy campaign in which your actions in one mission carry across to the next.

Finally, Tornado offers a two player head-to-head play via a serial cable, and a "Quickstart" option for white-



knuckled types who want immediate combat action.

Before take-off, you can outfit your craft with cluster bombs, laser-guided smart bombs, Sky Flash air-to-air missiles and dozens of other ordnance and munition types. Once you've selected your weaponry and are flying en route to your target, an impressive number of viewing

such as tanks, armored vehicles, and all the other aircraft you may encounter in the game. Each is accompanied by a real-world digitized screenshot of the vehicle in question. Tornado is fully hard-drive installable, and the four non-protected game diskettes take up about 3.5 MB when installed.

Accompanying the game diskettes is a massive 330+ page

At the highest detail setting, you'll be able to see buildings, runways, bridges, and dozens of other man-made and natural structures and geographic features.

positions let you view your craft from many angles.

The terrain and objects in Tornado consist of polygons, although the detail setting can be adjusted manually for more or less detail. At the highest detail setting, you'll be able to see buildings, runways, bridges, and dozens of other man-made and natural structures and geographic features. Over a dozen preferences settings allow you to alter such things as ground, horizon and sky detail, tailoring the game to match the speed of your machine. Finally, a nifty review option lets you take a close-up look at all the polygon objects in Tornado,

manual, two maps, a control-key reference booklet, and an Amiga-specific technical supplement.

All these game features do come at a cost. The game is simply unplayable on a stock A500, akin to doing the breast-stroke in a pool full of honey. Barely playable on an A1200, Tornado practically requires an Amiga with a speedy '030 or '040 processor to run at an acceptable rate of speed. Running on a 68040-equipped Amiga sporting gobs of RAM and an analog joystick, Tornado simply comes into a league of its own.



Zool 2

by Jeff James

In addition to the hefty hardware requirements, another caveat concerns the decision of Digital Integration to remove modem play, mission planning and command level options from the Amiga version. While it's understandable that a program of Tornado's magnitude would bring anything less than an A3000 to its number-crunching knees, the removal of those options limits the scope of the game and serves as yet another reminder to Amiga owners that their machines are getting too slow to run anything seen on the IBM side of the fence.

Digital Integration is hard at work on a speedier A1200 version with AGA graphics support, but it also may not include the features found in the IBM version. One can only hope that Digital Integration decides to offer the missing features in a future scenario disk or other add-on product.

Even with the omissions from the IBM version, Tornado emerges as the new Top Gun in the sparsely populated Amiga flight simulator market. The price of admission may be exacted in hefty — and therefore expensive — hardware requirements, but Tornado is simply the best attempt yet at creating the ultimate Amiga flight simulator.

Tornado

Retail Price: About \$50 U.S.

Requirements:

1 MB RAM, Mouse

Digital Integration Ltd.

Watchmoor Trade Centre

Watchmoor Road

Camberley, Surrey GU15 3AJ

England

Tel: 0276 678806 (UK)

E-mail:

digint@cix.compulink.co.uk

Inquiry #201

This time, Zool doesn't have to face Krool and his cohorts alone. Aiding Zool is Zooz, Zool's girlfriend; and Zoon, Zool's two-headed dog.

The sequel to the most popular Amiga platform game ever, Zool 2 warps Amiga gamers once again to the mysterious "Nth Dimension."

It seems that Krool, the evil mastermind behind Zool 1, is once again attempting to spread boredom across the universe. This time, Krool has sent Mental Block, a shape-changing cube of pure malevolence, to supervise the invasion. A square in the truest sense of the word, Mental Block will do everything in his power to make the universe as boring as possible.

Once again it's up to Zool — everyone's favorite extra-dimensional ninja ant — to save the day (and the universe). This time, Zool doesn't have to face Krool and his cohorts alone. Aiding Zool in his quest are two sidekicks: Zooz, Zool's girlfriend; and Zoon, Zool's two-headed dog.

The game begins with the selection of which character you want to control: either Zool or Zooz. Three levels of difficulty are also offered, making gameplay adjustable for less dexterous gamers. Gameplay is similar to the original Zool, with the player controlling Zool/Zooz via joystick to jump up levels, run across platforms and vanquish enemies. Pressing the fire button will cause either hero to fire Ninja bullets, while pressing the fire button in combination with a joystick movements causes Zool/Zooz to jump, do backflips, etc.

Zool and Zooz both have slightly different strengths and weakness; Zooz can brandish an energy whip, whereas Zool can execute a spinning power

jump to bash through ceilings. Littered about the Zool 2 landscape are a variety of powerups and other pixelized goodies. Pick up three Zoon powerups and you're warped to a bonus level that Zoon will help you finish.

Six different game levels are included; to make it through each level, Zool and Zooz have to collect the vast majority (99% to be exact) of tokens found in each level. Once that number is reached, you're immediately whisked off to the next level. After you've finished five levels, you're set for the final showdown with Mental Block on his home turf.

Two versions of Zool 2 are available: a 256-color, AGA-only version and a less-colorful version for non-AGA Amigas. I looked at the non-AGA version, and the graphics were crisp and colorful, making full use of the ECS chipset. If you do have an A1200 or A4000, you should wait for the more vivid AGA-only version — it should be

worth the wait. Sound effects and music are also excellent, complete with a fast-paced, frenetic soundtrack to keep your adrenaline flowing while you jump and kick your way to victory.

Obviously aimed at the bubble gum and sneaker set, Zool 2 comes complete with a lollipop, Zool postcard, poster and a variety of stickers. The manual is preceded by a brief comic book that sets the stage for the story.

Zool 2 isn't perfect: the copy protection is a bit cumbersome, hard drive installation isn't supported, and the game must be booted in PAL (Zool 2 is packaged with a Boot Disk to create a PAL environment on your Amiga) with a program like Degradar to function correctly. Nevertheless, Gremlin has a winning formula with Zool 2. If you've been looking for a platform arcade game to match the best of what the Super NES and Genesis have to offer, look no further than Zool 2.

Zool 2

Price: Approx. \$50 US

Requires:

1 MB Chip RAM

Gremlin Graphics

Carver House, 2-4 Carver

Street

Sheffield, England S1 4FS

Tel: (0742) 753423

Inquiry #202

•AC•



US market in marketing the Amiga. Do you share that view or do you have another game plan?

Pleasance: No, I don't share that view, and the reason that I don't share that view is for many years now 85% of Commodore's business has come out of Europe. We do not have the dependency on America that everybody believes we should have. My dilemma is that I spent ten months in 1992 in America looking at the retail market opportunities and frankly the cost involved in launching brand awareness in America is so prohibitive. To do a very mediocre campaign to only twenty cities you are talking twenty-five million dollars and that is a lot of investment for possibly a very small return. I would want to be absolutely certain that my core business was off and running and profitable around Europe before I would consider investing that kind of money.

AC: In your opinion, do you believe there was enough investment in the European market before Commodore went under?

Pleasance: Yes, I think we did.

AC: And yet, Commodore still went under.

I am absolutely determined that if we win this bid it will be the best thing that has happened to the Amiga ever.

Pleasance: Yes, absolutely. But, that was total mismanagement of the company's resources. They spent so much money delving into the PC business and reinventing the wheel. There was at one time 46 engineers in West Chester all working on PC products. It was obscene.

Commodore was messed up big time by a president of the company who had no understanding of the market and totally ignored all the advice he received from his general managers all around the world and decided to keep Commodore a one-man company.

I can't promise to turn things around overnight, but what I can say is that we have a successful business here in the UK and nobody can deny that. In fact our business plan, our whole proposition in bidding for this world-wide business, is based on the turnover in the UK alone. It is not based on any turnover outside the UK, which gives you an indication of the strength of the business here.

My commitment is to be successful in this bid, and to replicate what we have done here. We will do it gradually, not in a big rush. We will build a very solid business around the world.

The businesses in other parts of Europe were not solid because a lot of them were dependent on PCs where there was not much margin. So as soon as all the PC business went away the real extent of this business came to fruition, so that shows you that there was no solid business. We have to rebuild and I am not doing it through the previous subsidiaries because I think that they have the same cancer that the corporation had.

We are going to start in each of these companies with a blank sheet of paper. We are going to find the best way in each country to develop the business. We will be completely supportive of anybody who wants to take on the distribution. We will make it as easy as possible for people. If they feel that they are comfortable with distributing the Amiga product line and they are prepared to invest in it, I am absolutely certain that they will do well. That is the best that we can offer.

AC: What do you need?

Pleasance: That will depend on whether we win the bid or not. One thing I want to make clear to you, unlike the previous corporation, we will endeavor to sublicense and cooperate with anybody who wants to develop and manufacture things that work for and with Amiga products. We will work with anybody in any capacity to extend the Amiga and its acceptance world-wide, unlike the previous management who did not want to do anything.

AC: How much of this do you want on-the-record?

Pleasance: You can put all of it on the record. We pride ourselves that our business has been built on a complete and ethical basis. We always tell it like it is, even the bad news. We lay it on the table and tell it like it is.

AC: The liquidators appear to be slow in their selection. What kind of reaction are you getting?

Pleasance: You need to understand. I went to the Bahamas two weeks ago, I met with the liquidators and some of the major creditors. They have extended the deadline because we, as part of Commodore, were not given the green light to make a management buy-out bid until about four weeks ago. We asked about twelve weeks ago, when Mehdi Ali was still involved, and he talked the liquidators out of letting us do it. He said it was not in the company's best interest. The creditors are extremely keen to be certain that we are in a position to make a bid and as such, they have given us an extension which is very important to us.

Now we have secured the financing, which is probably the biggest hurdle of all, and now it is a matter of fine tuning our bid. As a result of meeting with the liquidator, I now know what there is to buy in terms of inventory, component parts, and so on. Now we know exactly what there is available. I would hope that we will get an answer in no more than three or four weeks. In fact, we have told them that if we don't have a commitment by August 30th then we are not in business. Because, if we would not be able to manufacture for the Christmas market, it would be a no-go situation. I am fairly confident that it will happen quickly, it is just a matter of our bid being high enough to win the support of the creditors.

AC: How soon will you be able to get product, if they meet your August 30th deadline?

Pleasance: The earliest we will get products manufactured is the first week in November.

AC: Is that into the stores?

Pleasance: Into the stores in the UK.

AC: And North America will be another month or two?

Pleasance: Yes. However, if we get orders, if someone wants to buy from us, then we will put it into the build plan. We have the capacity, but then you have to add in the freight time. Obviously, if they want to pay air freight, then it may only be a few days more.

AC: Are you building in the UK?

Pleasance: Everything will be subcontracted and built in the UK.

AC: No more Philippines?

Pleasance: I am not going to put up with substandard quality any longer. We intend to improve the quality. Our record stands under any scrutiny. I have been with Commodore for eleven years. I launched the Amiga in this country. We have a huge business in this country. We have a magazine circulation in this country of 600,000 Amiga magazines per month.

This is a market that we have built up and I have no intention of giving up this product. I have every intention of replicating what we have done here and spreading it across the world. It may take a while to do that, but I am absolutely intent on doing it.

I have concerns that other people who are looking at this business are looking for short term gains and then they will get out. I think that would be wrong for the Amiga and for all of those

people whose livelihoods depend on it. In Europe there are hundreds and hundreds of people whose livelihoods depend on the Amiga continuing. I don't believe there is anybody else interested in buying this company who would give it the commitment and enthusiasm that we can.

This product has to be in retail. That is where this product belongs and that is our strength as a company. We are not a Compact or an IBM. 70% of reason this company has gone under is because Mehdi Ali tried to turn it into that.

I am very passionate about this thing—very passionate. I have a very good reputation in this business, I am ethical. I don't tell people lies. People build their businesses on this kind of relationship. I am absolutely determined that if we win this bid, it will be the best thing that has ever happened to the Amiga.

It is our intention to put people in a position of win-win. If we cannot do that, then we should not go forward. I do not mind how long it takes to build a market in any given country. That country will get as much support as we can specifically give to it. As long as we win the bid, there is no doubt that we will be in a position to support people. I think in a way definitely better than anyone else can.

AC: If you do win, what items will you be pushing first? Do you have a specific game plan?

Pleasant: We will continue with the current range—32, 1200, and 4000. To be honest, we have no opportunity time-wise to make any changes until February, after we have gotten Christmas out of the way. Obviously we are going to start to review products and the triple-A chip set which is 95% complete. At that time, we will review our opportunities and discuss with our newly recreated engineering department what our alternatives are. We are keenly interested in what we can create from the triple-A chip set and the 64-bit RISC processors. However, our main business will be the current CD32, Amiga 4000, and the Amiga 1200. There is such a pent-up demand for these products that we can successfully produce and sell these current designs before we pressure engineering into providing a new platform prematurely.

I want to work very closely with third party developers to help them create accessories and peripherals which work with our current range of products and complement them. We are prepared to sublicense deals in order to promote that, because we are not in the position to do it and the product needs that kind of support. So we need to do it hand-in-hand with partners who want to get involved. I think, to be fair, Mehdi Ali in the past was this company's best sales prevention officer.

I don't know. I just question everybody else's motives for wanting this company.

I know what our motives are. To be totally clear, they are a continuation of the business that we currently have and to develop that business world-wide. I think it is the right and the ethical way forward. We just have to hope that our bid is substantial enough to win.

AC: Will we see the development of NTSC machines as well as PAL machines?

Pleasant: Absolutely. That is another reason that we want to maintain the R&D center specifically for the hardware and the chip development in the states. No question about that at all. I am not going to abandon any market. Everything will be done in parallel.

AC: What sort of marketing budget are you looking at at this time?

Pleasant: Our current plan is based entirely on the UK business. Once we know we have won the bid, that will take three to four weeks, our plan will include a marketing budget for the UK only. But, once we have the business, we will talk to each individual country and see what the business potential is. Then we will include each of those countries in our business plan. After we have determined what the likely amount of turnover—in other words,

when we know the volume of products that people will be interested in taking, then we will allocate a budget accordingly. It is all based on how much product we sell.

AC: It is also based on having the business by August 30th. Are you looking to have the business in hand by August 30th?

Pleasant: That maybe a little optimistic. It is likely to be another two or three weeks after that. But, once we have been given the go ahead, then we will commit to ordering components and other material. Although we know what parts are being held by CEL (the old Commodore assembly company), we also know what products are not available and we need to order. We will have to pay an expedition charge because these orders will be late. Our business plan reflects that. We know we will make less margin in the first year than we will in subsequent years because, we have to pay extra money to get the components over in time to get into business. But that is all in place. The manufacturing is all in place. So it is not that we are going to be delayed for any reason other than the length of time it takes to give us an absolute assurance that we have won the business.

AC: You are planning to assemble in the old Scotland facility?

It is our intention to put people in a position of win-win. If we cannot do that then we should not go forward.

Pleasant: Yes and we have another company, another very major company, that is ready, willing, and able to manufacture for us. They will take a little longer to ramp up because they have never done it before. Whereas the Scottish company has of course and they are already to go.

AC: That is not Amstrad?

Pleasant: No, Amstrad and Philips were going together, but they are not anymore. Amstrad is no longer interested in bidding for the Amiga.

AC: So there is Philips, a management group from the US, your group, and Samsung?

Pleasant: Samsung is still interested as well as another two or three companies.

AC: Is there anything you want to leave with our readers before you go?

Pleasant: I think only that I believe that we have the very best interest of the Amiga users and the Amiga developers at heart. If we win the bid I know it will be the best thing for them.

I also want to stress to the current team of R&D people that their jobs are very secure if we get the company in our hands.

AC: But, are they still available?

Pleasant: Those that are there we intend to make very comfortable. We do intend to rerecruit as many of the previous engineers as we can. We are going to rebuild the whole engineering side to the amount of people we will need, which will be about 60 to 65 people. They are very key to our future and we want them to know that. We do intend to do a massive rerecruitment program to get back some of the talent we have lost and hopefully supplement that with new people as well.

•AC•

And furthermore...



Commodore UK's General Manager, David Pleasance is mounting a drive to buy Commodore and the Amiga Technology in a management buyout bid. In an exclusive interview with AC, Mr. Pleasance describes his direction for the Amiga.

Early on the morning of July 26, we were able to discuss some concerns of the Amiga market with David Pleasance, Commodore's General Manager for the UK. Although he has held the position for just over a year, David Pleasance has been with the Commodore for eleven years. He has been credited by some for establishing the Amiga in the UK while he was in charge of Commodore's UK sales. His most notable achievement was the very successful software and hardware pack programs that combined Amigas and high-interest games. Now Mr. Pleasance wants to do more.

AC: Mr. Pleasance, you are heading up a Commodore management group to purchase Commodore and the Amiga technology?

Pleasance: That is correct. Unfortunately nothing is certain. At the end of the day, we are very confident that our bid will succeed but it is really in the hands of the liquidators and the creditors. My belief is that our bid is the only way that the Amiga product will survive. Everybody else is just bidding for the Amiga technology to apply to other products they want to do themselves. This has no bearing on the Amiga and it is not a healthy situation. We have a very solid Amiga business in the UK, as well as in Europe. We are very keen to win this bid and we now have the financing which is important.

AC: Do your plans include distribution of the Amiga in North America?

Pleasance: Yes, we want to distribute Amigas all around the world. And we are very happy to talk with anybody who is interested in handling portions of the project. We are not buying all the separate Commodore subsidiaries which simply are not worth buying. We are very keen that the Amiga product line gets into all the markets and the US is very important to us.

AC: When you say someone in the United States, are you saying that they would be responsible for the marketing in the U.S.?

Pleasance: Essentially, in the early stages we have to concentrate on our core business, which is the UK. What we are looking for is someone who will take on the distribution in a possible joint venture, where they buy the products from us at the lowest possible cost, then market the product and share in the profits. Something like that.

AC: Are we talking about the entire line of Amiga products—the 4000 and 1200.

Pleasance: Yes, we are

AC: As well as the CD32?

Pleasance: Yes, absolutely.

AC: There is a rumor that you will continue the development here in the states at West Chester and the head offices will be in the UK.

Pleasance: Correct. We are considering establishing a software development function here in the UK because that is clearly where most of the software is developed. I think it would help us strengthen our relationships with the software publishers, which is very important for the long term future of the Amiga. So, we may well look to doing something in the UK in terms of software development, but the current engineering group is still the key to the future. We have absolutely assured them that they have longevity of employment and that their lot will be improved significantly.

AC: Can software and hardware developers look forward to similar support as they have received in the past or better?

Pleasance: Better. Let's be honest about it. The reason why Commodore UK has the strength of position it has, is because we have established relationships, particularly with software developers, that is second to none in the business. We intend to replicate that in all parts of the world.

AC: It is a well held belief, and it is a belief of this magazine, that the reason the Amiga did not do well was that Commodore neglected the

(continued on page 78)



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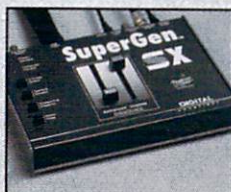
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SuperGen 2000s
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Version 2.0 of Brilliance has been designed with productivity in mind. Several new features enhance this already powerful program. Features like *Flip Frames* that allows the animator to flip through drawings. *Rub Thru* that makes compositing easier. *Load and Save Tween paths* enabling much longer and repeatable brush moves. Faster and more accurate Tweening. *True View* option for magnification. And much, much more.

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Genlock Option

Required to synchronize the Kitchen Sync to an external video source.

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Required to enable S-VHS/Hi-8 (Y/C) video outputs.

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Video Slot Box



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The Reviews are in...

"The program is so fast and flexible that it makes its Amiga predecessors feel like the old Doodle! program on the Commodore 64. Nothing out there can match its feature set, and it's the one paint program I've used that's so fast that it never gets in the way of your creativity."

Amiga Computing,
October 1993 (UK)

"Brilliance is now — leaving DPaint trailing in its wake — the best art package available for the Amiga. It's very hard to express why I'm so taken by Brilliance, there's just a feeling of 'rightness' about the way that it works."

C U Amiga,
October 1993 (UK)



"For many years, DPaint ruled the roost when it came to supplying incredible graphics power at an affordable price, but no longer. Brilliance has assumed centre stage and is now the Amiga's number one art package."

C U Amiga,
January 1994 (UK)

"After using Brilliance for just a couple of days, I'm hooked. It is the only package to be released for the Amiga which can rival DeluxePaint for animation capabilities, and it is a class act."

Amiga Down Under
Nov/Dec 1993
(New Zealand)

"Excellent! Brilliance is loaded with useful drawing and animation features, but it's not just the sheer number of tools on offer that impresses. Two other big points arise. First, the program is very easy to use, thanks to its intuitive, flexible and well thought-out panel system. The second major factor is Brilliance's speed. Even in HAM-8 mode, everything zips along beautifully quickly."

Amiga Format,
October 1993 (UK)

"It took a while, but Deluxe Paint IV has finally met its match. If you're looking for the best AGA paint program on the Amiga, look no further than Brilliance."

Amazing Computing,
November 1993 (USA)

"Brilliance is user friendly, doing an excellent job with nearly every function and option that it offers..."

AmigaWorld,
December 1993 (USA)

"It is solid as a rock. Never have I known a first version of any program stand up like this or be so perfectly polished."

Amiga Shopper,
December 1993 (UK)

...Brilliance kicked Tut's Butt!

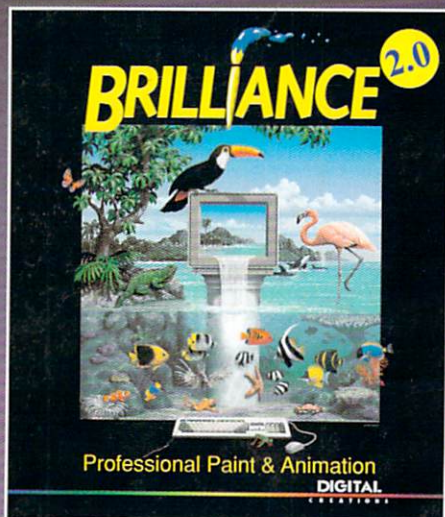


COMPARE! Deluxe Paint IV Vs. Brilliance

	Slow	Fast
Overall Speed		
Picture Size Limited By:		
Chip RAM	Yes	No
Total RAM	N/A	Yes
Number of Brushes		29
Number of Anim Brushes	2	9
Number of Screens	2	Lots*
Levels of Undo	1	Lots*
Levels of Redo	1	Lots*
Load/Save Paths	Yes	Yes
Flip Frames	No	Yes
Realtime Preview Mode	No	Yes
Full Screen HAM Gradient Fill	Slow	Fast
Max # of Colors Gradient Fill	16	30,000
True 24 Bit Editing	No	Yes
Load DCTV Pics as HAM	No	Yes
Max Animation Speed	30fps	99fps
Ground-up Design for AGA	No	Yes
* Limited only by total RAM		

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